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THERAPEUTICS OF DIPHTHERIA.¹

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The liquids which are to be injected must be warm and fairly mild. Solutions of chloride of sodium, two-thirds of one per cent.; saturated solutions of boric acid; one part of bichloride of mercury, 35 of chloride of sodium and 5000 of water, more or less; or lime water, or solutions of papayotin, will be found satisfactory. From the selection of these remedies it is at once apparent that the object in view is partly that of washing out and partly of disinfecting. I have not mentioned carbolic acid, which may be used in solutions of one per cent. or less. Its employment requires care, for much of the injected fluid is swallowed, and proves a danger to children of any age, but mostly to the young.

Most of the syringes I find in my rounds are abominations. The nozzle must be large, blunt and soft. After having recommended for many years the common hard rubber ear syringe, the sharp end of which was cut off, I now use always a short stout glass syringe, with soft rubber mounting in front.

When the children cannot, or must not be raised, I employ the same solutions from a spoon, or a plain Davidson atomizer. These applications can thus be made while the children are lying down, every hour, or very much oftener, without any or much annoyance. The nozzle must be large, so as to fit the nostril. A single spray on each side will generally suffice. I am in the habit of cov-

ering the common nozzle with a short piece of india-rubber tubing. For a day or two these injections of fluids or sprays must be made hourly. It is not cruel to wake the children out of their septic drowsiness—it is certain death not to do it.

Injections of the nose are oftener ordered than judiciously made. Hundreds of times have I been assured that they had been made regularly, hourly, for days in succession. Still there was a steady increase of glandular swelling and sepsis. I never believe a nurse to have made them regularly unless I have seen her doing it. They *will* turn up their syringe vertically, and not horizontally; the fluid *will* return through the same nostril. On the successful injecting or spraying of the nares hangs every life in a case of nasal diphtheria. I have long learned to look upon a neglect to tell at every visit how to make an injection, as a dereliction of duty. This may appear a trifling way, but it is a safe one. The nurse must be made to tell you that at every injection the fluid returns through the other nostril, or through the mouth, or is swallowed.

The procedure is simple enough, and need not take more than half a minute for both nostrils. A towel is thrown over the child's chest up to the chin and the child gently raised in bed by the person who is to make the injection. This person sitting on the bed steadies the patient's head against her chest while somebody else holds the patient's hands. The syringe is introduced horizontally, by the person sitting behind the patient and gently emptied. No time must be lost in refilling and attending to the other side. When pain is complained of in the ears more gentleness is required, or the spray, or pouring from a spoon, or minim dropper even, has to take the place of the injection. Many sins are committed in even doing

¹ A paper read at the meeting of the Philadelphia County Medical Society, May 23, 1888.

this simple thing. The unfortunate little one is made to see all the preparations and is worried and excited, and the necessary gentleness in the proceedings is neglected. The cases reported by me in a discussion on the local treatment of diphtheria before the Section on Theory and Practice in the New York Academy of Medicine, read as follows:¹

"There were two trained nurses, and two children of six and four years. When I saw the little four-year-old the other was dead. Where did he die? His head between the knees of the trained nurse. They had been told Dr. Jacobi ordered nasal injections to be made every hour in such cases. Every hour the unfortunate boy was lugged out of bed, protesting and fighting, and wearing out his little strength in his battle against two trained brutes; had his head rammed between the knees of one of them who was herself comfortably seated on a chair while the other did the rest; and thus the boy was murdered. When I heard that fearful story from the smiling lips of that person, I begged and pleaded, and showed her how to do it gently. A week afterward the doctor told me that the little girl died between the knees of one of the smiling creatures, and neither of them is in the State prison."

What is the concentration in which anti-septic injections should be used? For twenty-five years and more, while employing irrigations and injections frequently, I had used quite weak solutions and felt assured of their efficacy. All at once (when the gospel of the bacteria was being preached) it was claimed that weak solutions were useless and a snare, because antisepsics, and particularly carbolic acid, would not destroy bacteria and bacteria-poisons except in such doses and concentrations as would necessarily destroy blood and tissues first. I felt dismayed, but still continued in my heretic ways, hoping that improved knowledge would finally harmonize theory and practice. So it happened. In the *American Journal of the Medical Sciences* for January, 1881, T. Mitchell Prudden proved that a solution of one-sixteenth of one per cent. of carbolic acid prevents the emigration of white-blood corpuscles under circumstances otherwise favorable to inflammation; and Koch found that though bacteria are not easily killed, their growth is stopped by a solution of one part of carbolic acid in 850, and their activity by one in 1200. These effects are all that is required for practical purposes; thus the frequency of applications is justified by both necessity and safety.

Diphtheritic adenitis, the swelling of the cervical glands near the angles of the lower jaw, to which I have alluded as an ominous symptom, points to nasal and nasopharyngeal infection. The treatment consists in disinfection of the absorbing surfaces.

Direct local treatment of the glands, if not entirely useless, is, at all events, of minor importance and efficiency. Applications of one part of carbolic acid to ten of alcohol, irritate both surface and patient more than they can do good. Inunctions may do some good by friction (massage); inunctions with some absorbable material in them may do a little better. The common iodide of potassium ointment is useless; iodide of potassium in three or five parts of glycerine is more readily absorbed; the same in equal parts of water, with a little animal fat, and six or eight times its quantity of lanolin, gives an ointment which is readily absorbed. Iodine is found in the urine within a few hours. Iodoform may be utilized in the same way. Injections of iodoform in ether, which I suggested some time ago, are too painful. Mercurial inunctions, those of blue ointment, require too much time for any effect to take place. Oleates are too irritating locally; a lanolin ointment would prove more satisfactory. After all, however, the readiest method of reducing the swelling of the glands, and improving the prognosis accordingly, is that of cleansing and disinfecting the field of absorption. The rare cases of suppuration in these glands require incision and disinfection. They are as ominous as rare, however. There is but little pus, as a rule, but one or many local deposits of disintegrated gland cells and gangrenous connective tissue. The incisions must be extensive, the scoop and concentrated carbolic acid must be freely used. In these cases hemorrhages may occur, some of them very difficult to manage. I have seen some of them terminate fatally. In these carbolic acid must be avoided. Compression, actual cautery, and acupressure, have rendered good service. Solutions of iron must be avoided, for the scurf formed is a shield behind which deleterious absorption is going on constantly in such wounds, as it does in the uterus.

Besides sepsis, the great dangers in diphtheria are heart failure and strangulation. The latter has its own indication, to which I shall not allude to-day. Heart failure exhibits itself sometimes quite suddenly, but, as a rule, it is foreshadowed by a gradually increasing frequency, weakness of heart-beats and pulse, and the equal length of the intervals between the feeble systole and diastole,

¹ *N. Y. Medical Record*, 1887, p. 403.

and diastole and systole. This equality is always a dangerous symptom. Heart failure is due, besides the influences common to every disease and every fever, to myocardial changes. These may depend on the influence of septic decomposition of the blood, and the ill-nutrition of the heart-muscle depending thereon, or on the direct diphtheritic changes of the tissue, or both. These changes and dangers set in, sometimes, at a very early period. Thus whatever enfeebles must be avoided. Patients must be spared every unnecessary activity. They must remain in bed, without excitement of any kind, take their meals, and evacuate their bowels in a recumbent or semi-recumbent position; crying and worrying must be avoided; the room kept airy, and rather dark, so as to encourage sleep if the patient be restless. In no disease, except, perhaps, in pneumonia, have I seen more fatal results from sudden changes of posture, or from exertion. Unless absolute rest be enforced, neither physician or nurse has done his or her duty.

The threatened feebleness of the heart yields a positive therapeutical indication. In no disease is the danger greater on the side of the heart, in no disease is the indication for sustaining and strengthening the heart more positive from the very beginning. Digitalis, strophanthus, sparteine, besides camphor, alcohol and musk, must not be postponed until feebleness and collapse have set in. It is possible, or probable that they will appear; and it is certain that a cardiac stimulant will do no harm. It is safe, and advisable to use them at an early date. This is especially necessary when antipyrine or antifebrine is given. A few grains of digitalis, in a palatable and digestible form, may, or must, be given daily. When a speedy effect is required, one or two doses of from two to four grains are not too large, and must be followed by smaller ones. When it is justly feared that the effect of digitalis may be too slow, I give, with or without the former, sulphate of sparteine. An infant a year old will take one-tenth of a grain four times a day, as a matter of precaution, and every hour or every two hours in an emergency.

Of at least the same importance as cardiac tonics are alcoholic stimulants. The advice to wait for positive symptoms of heart failure and collapse before the life-saving apparatus is employed, is bad. There are cases which get well without treatment, but we do not know beforehand which they will be. No alleged mild case is safe until it has recovered. When heart failure sets in—and often it will occur in apparently mild cases—our

efforts are too often in vain. Thus alcoholic stimulants ought to be given early, and in large quantities, though amply diluted. There is no such thing as intoxication or danger from it, in septic diseases. A few ounces daily may suffice, but I have seen ten ounces daily of brandy or whiskey save children who had done badly with three and four.

Coffee is a good stimulant for the heart. Camphor may be employed to great advantage for the same purpose. From five to twenty-five grains may be given daily, as camphor water, or in a mucilaginous emulsion, which is easily taken. It does not upset the stomach as ammonium carbonate is liable to do. It may be employed subcutaneously when a rapid effect is aimed at, in five parts of oil, which is milder and more convenient than ether.

But the best internal stimulant, in urgent cases, is Siberian musk, in powders, or with mucilage. When required at all it ought to be given in sufficient doses, and at short intervals. When ten or fifteen grains administered to a child one or two years old, will not accomplish, within three or four hours, a return of a more satisfactory heart's action, the prognosis is very bad.

Besides exhaustion at the height of the disease, we have paralysis during convalescence, or intense anæmia long after apparent recovery. This anæmia may be general, or is local, and then mostly cerebral.

Diphtheritic paralysis, though of different anatomical and histological origin, yields in all cases a certain number of identical therapeutical indications. These are: The sustaining of the strength of the heart by digitalis and other cardiac tonics. A child of three years may take daily, for a month, three grains or its equivalent; for instance, one grain of the extract. This is an indication on which I cannot dwell too much. Many of the acute, and most of the chronic diseases of all ages, do very much better by adding to other medications a regular dose of a cardiac tonic. It is true that it is a good practice to follow the golden rule to prescribe simply, and, if possible, a single remedy only, but a better one is to prescribe efficiently. A prescription paper with a single line on it looks well, but a readily convalescent or well man, looks better.

Besides, there are some more indications: Mild preparations of iron, provided the digestive organs are not interfered with. Strychnia or other preparations of *nux vomica* at all events. In ordinary cases a child of three years will take an eightieth of a grain three or four times a day. Local friction, massage of the throat, of the extremities, and trunk, dry or

with hot water, or oil, or water and alcohol; and the use of both the interrupted and continuous currents, according to the known rules, and the locality of the suffering parts, find their ready indications. The paralysis of the respiratory muscles is quite dangerous; the apnea resulting from it may prove fatal in a short time. In such cases the electrical current used for very short periods, but very frequently, and hypodermic injections of sulphate of strychnia in more than text-book doses, and frequently repeated, will render good service. I remember a case in which these, and the occasional use of an interrupted current, and occasional artificial respiration by Silvester's method, persevered in for the better part of three days, proved effective.

Chloride of Iron.—I am still, as I was in my first paper on diphtheria, in 1860, an advocate of the internal use of chloride of iron. Its mode of administration I have not changed much these twenty years. In a public lecture delivered before a New York audience, by an European authority, whose name has lately appeared a little more prominently in the newspapers than an American physician would wish, I was highly praised for giving a few drops of the tincture of the chloride of iron a few times a day. This eulogy I have always tried not to deserve, for the efficient method of its administration is not that. The chloride of iron is an astringent and antiseptic. Its contact with the diseased surface is as important as is its general effect; therefore it must be given frequently, in hourly or half hourly doses, even every twenty or fifteen minutes. An infant of a year may take three or four grammes a day, a child of three or five years, eight or twelve. It must be mixed with water to such an extent, that the dose is half a teaspoonful or a teaspoonful; a drachm in four ounces allows half a teaspoonful every twenty minutes. No water must be drunk after the medicine. As a rule, it is well tolerated. There are some, however, who will not bear it well. Vomiting or diarrhoea is a contraindication to persevering in its use, for nothing must be allowed to occur which reduces strength and vigor. A good adjuvant is glycerine, better than syrups. From ten to fifteen per cent. of the mixture may consist of it. Now and then, but rarely, it is not well tolerated either. When diarrhoea sets in glycerine must be discontinued. Still these cases are rare; indeed, the stomach bears glycerine very much better than the rectum. In the latter, the presence of a small dose of glycerine is known sometimes

to produce large evacuations, a result appropriated and utilized by an advertising nostrum monger.

In connection with this remedy, I wish to make a remark of decidedly practical importance. I know quite well that recovery does not always prove the efficacy of the remedy or remedies administered. But I have seen so many bad cases recover with chloride of iron, when treated after the method detailed above, that I cannot rescind former expressions of my belief in its value. Still, I have often been so situated that I had to give it up in peculiar cases. These are cases in which the main symptoms are those of intense sepsis, I should say cases in which the iron and other rational treatment was not powerful enough to prevent the rapid progress of the disease. Children with nasopharyngeal diphtheria, large glandular swelling, feeble heart and frequent pulse, thorough sepsis, and irritable stomach besides, those in which only large doses of stimulants, general and cardiac, can possibly promise any relief, are better off without the iron. When the circumstances are such as to leave the choice between iron and alcohol, it is best to omit the iron and rely on stimulants mostly. The quantities required are so great that the absorbent powers of the stomach are no longer sufficient for both.

Nor is iron sufficient or safe in those cases which are preëminently laryngeal. To rely on iron in membranous croup means waste and danger.

Mercury.—The first volume of *A system of Practical Medicine by American Authors*, which appeared in 1885, contains in an article on diphtheria, written in 1884, the following remarks on page 705:

"Not all cases of diphtheria are septic or gangrenous, nor are all the cases occurring during an epidemic of the same type. Some have the well-pronounced character of a local disease, either on the tonsils or in the larynx. The cases of sporadic croup, met with in the intervals between epidemics, present few constitutional symptoms, and assume more the nature of an active inflammatory disease, very much like the sporadic cases of fibrinous tracheo-bronchitis. These are the cases in which mercury deserves to have friends, apologists, and even eulogists. Calomel, 0.5-0.75 gramme (grs. viii-xii), divided into thirty or forty doses, one of which is taken every half hour, is apt to produce a constitutional effect very soon. Such, with minute doses of one milligramme (gr. $\frac{1}{60}$), or more, of tartar emetic, or ten or twenty times that amount of oxsulphuret

of antimony, have served me well in acute fibrinous tracheo-bronchitis. But the mucous membrane of the trachea and bronchi is more liable to submit to such liquefying and macerating treatment than the vocal cords. The latter have no muciparous glands like the former, in which they are very copious. And while the tracheal pseudo-membrane, though recent, is apt to be expelled through a tracheal incision at once, that of the vocal cords takes from six days to sixteen or more for complete removal. Still, a certain effect may even here be accomplished, for maceration does not depend only on the local secretion of the muciparous glands, but on the total secretion of the whole surface, which is in constant contact with the whole respiratory tract. Thus, either on theoretical principles, or on the ground of actual experience, men of learning and judgment have used mercury in such cases as I detailed above, with a certain confidence.

"If ever mercury is expected to do any good in cases of suffocation by membrane, it must be made to act promptly. This is what the blue ointment does not. In its place I recommend the oleate, ten or twelve minimis of which may be rubbed into the skin along the inside of the forearms or thighs, or anywhere else when those surfaces become irritated, every hour or two hours. Or repeated doses will be useful such as mentioned before, or hypodermic injections of corrosive sublimate, in one-half or one per cent. solution in distilled water, four or five drops from four to six times a day or more, either by itself, or in combination with the extensive use of the oleate, or with calomel internally. Lately, the cyanide of mercury has been recommended very strongly. I hardly believe that it will work more satisfactorily than any other equally soluble preparation. Within the past few years the internal administration of bichloride of mercury has been resorted to more frequently and with greater success than ever before.

"My own recent experience with it has been encouraging, and so has that of some of my friends. Wm. Pepper gave one-thirty-second of a grain of corrosive sublimate every two hours in a bad form of diphtheritic croup, with a favorable result. But in this very bad case, desperate though it was—a child of five years, respiration 70, pulse 160—large membrane 'evidently from the larynx' had been expelled before the treatment was commenced on the seventh day of the disease. The solution ought to be given in solution of 1:5000, and in good doses. A baby, a year

old, may take one-half grain every day many days in succession, with very little, if any, intestinal disorder, and with no stomatitis. A solution of the corrosive sublimate in water is frequently employed of late as a disinfectant. It acts as such in a dilution of 1 in 20,000. As healthy mucous membranes bear quite well a proportion of 1:2000 or 3000, any strength between these extremes may be utilized. A grain of the sublimate in a pint or more of water, with a drachm of table salt, will be found both mild and efficient. As a gargle and nasal injection it will be found equally good. But it has appeared to me that frequent applications give rise to a copious mucous discharge; hourly injections into a diphtheritic vagina become quite obnoxious by such over-secretion, which ceases at once when the injections are discontinued. Thus, when it is desirable not only to disinfect, but also to heal the diseased surface, the injections with corrosive sublimate appear to yield a result inferior to less irritating applications."

These remarks of 1884 constitute what I consider a great progress over the statements of my treatise on diphtheria, 1880, which are more cautious and negative. Extensive experience with the remedy increased my favorable opinion of its efficiency to such an extent as to induce me to publish a number of cases and conclusions in the *Medical Record* of May 24, 1884.

They have been amply justified by the observations of the last four years, so that I am fully prepared to commit myself to the following statements: My conviction of the utter uselessness of internal medication in laryngeal diphtheria, membranous croup, is strongly shaken. The mortality of 90 or 95 per cent. of the cases not operated upon has no longer existed these five or six years, in my observation. The above figures were by no means taken from small numbers. For since 1860 I have performed tracheotomy more than 500, perhaps 600, times, have assisted in as many more operations, and seen at least a thousand cases of membranous croup which were not operated upon at all. During the last six years I have seen no less than 200 cases, perhaps many more. Amongst them, recoveries have not been rare. In the practice of no less a man than O'Dwyer, I have seen two cases of general and laryngeal diphtheria in the same family which got well without any operative procedure. Such recoveries have taken place in all ages, from four months upward. The uniform internal medication consisted in the administration of the bichloride of mercury. The smallest

daily dose was a quarter of a grain (15 milligrammes). Half a grain daily continued through five or six, sometimes eight, ten, or even twelve days, has not been rare amongst children of from three to six years. The doses varied from one-sixtieth to one-fortieth of a grain, and sometimes more. They are given every hour. They require dilution in a tablespoonful of water, or other compatible fluid, for instance milk, in order to be quite innocuous. They are not liable to produce gastric or intestinal irritation. When the latter occurred, it was generally found that by some mistake the solution was as strong as 1-2000 or 1-3000. In the few cases in which it did exist, or was believed to result from the remedy, a few minims of camphorated tincture of opium administered with every dose, for a short period, proved sufficient to check it. The beneficial effect of the remedy depends greatly upon the time of its administration. As a rule, such complete stenosis as necessitates surgical interference, develops only after days. This necessity is often obviated by the remedy when given as detailed. When the operation is required after all, the treatment must be continued. I have never since 1863 seen so many cases of tracheotomy getting well as between 1882 and 1886, when the bichloride was constantly used as mentioned. Nor am I alone with these observations. I can name a dozen New York physicians, some of whom have often performed tracheotomy, who can confirm the above statements from their own observations. Nor does the opinion of those differ who constantly perform intubation. I know that O'Dwyer, Dillon Brown, and Huber have come to the same conclusions, the latter having been a successful tracheotomist before he earned his laurels with intubation.

My experience in regard to the efficacy of the bichloride of mercury is mainly gathered in cases of laryngeal diphtheria, and a limited number of fibrinous bronchitis. It is there where it has been especially effective. Still I must not say that they were localized affections. These, with us, are but very scarce. Our cases of diphtheritic laryngitis are mostly decreasing, and complicated with either diphtheritic pharyngitis, or rhinitis, or both. Not a few, mainly of the latter kind, exhibit constitutional symptoms, sepsis. But cases of that kind also I have seen getting well. One of the most interesting was that of a little girl of seven years whom I saw a single time in consultation with Dr. J. Anderson. There was nasal and pharyngeal diphtheria, cervical adenitis, and some laryn-

geal stenosis. I recommended an hourly dose of one-fortieth of a grain of bichloride, which she took for ten days, also nasal injections of the same, one grain to a pint. They were made hourly for many days, and altogether continued for more than a fortnight, for the patient lived so long, and is still alive. She swallowed almost all the nasal injections, and great was my surprise when after some weeks I received the report of the case and learned that about twenty grains of the bichloride had found their way into the stomach of the little girl. She lived, had but little stomatitis, and hardly any intestinal irritation. If the case does not prove anything else, it proves this, that even desperate cases will get well; this case got well with the bichloride of mercury, and resembles all the other cases in this, that after the rational and careful administration of solutions of bichloride of mercury, local mercurial symptoms about gums, mouth, pharynx, and intestines, are extraordinarily rare in infancy and childhood.

ABDOMINAL DISEASE AND INSANITY.

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One of the chief problems with which the asylum physician has to deal is the regulation of the functions carried on by the abdominal viscera. The introduction and digestion of a sufficient amount of nutritious food, its proper assimilation and the eventual disposition of the *alvine residua*, are among the most constant objects of his care. It is not surprising that, recognizing the intimate relationship between abnormal mental states and gastric, hepatic and intestinal disturbances, the ancients should have fallen into the error of regarding the latter as a frequent primary cause. Down to the day of Schroeder Van der Kolk, eminent alienists sought in various indefinitely known nervous connections, existing between the viscera and the brain, the channels by which what they called "sympathetic insanity" was mediated. A reaction occurred; Griesinger rejected the older view, inflicting the sarcastic term "copro-psychiatry" on it. More modern authors have gone even further, and state that the cases of alleged insanity due to visceral disease will not bear critical examination. In a now historical discussion, which took place in the Medico-Psychological Society of Paris, the majority of the debaters took the position, that inasmuch as the most important

feature of the cases of alleged sympathetic insanity was a pre-existing disposition to nervous and mental disease, without which the visceral cause would probably have remained inoperative, it was not advisable to retain the term "sympathetic insanity" in our nomenclature.¹

I am myself of the opinion that nothing is gained, and much lost, by designating a form of insanity by its cause. When an alienist shows me a patient and declares him to be a case of "gastric" or "rectal insanity," he has given me no valuable information regarding the clinical manifestations of the case. It were as just for a clinician to designate a case of bronchiectasis, with its accompaniments, as "stone-cutter's disease." But it is legitimate and useful for the alienist, after defining the clinical form he is dealing with, designating it, say, as a "hypochondriacal paranoia," or a "persecutional melancholia;" to add, "on a foundation of dyspepsia," or "intimately related to a rectal prolapsus."

Diseases of the gastro-intestinal tract, and the appended glands, bear a far more important part in the causation and modification of insanity than is usually admitted in text-books on the subject. The reaction against the view held by the ancients, though in the main practical and just, has overstepped the bounds of truth. When we find a man who is suffering from gastro-intestinal catarrh, manifest an irresistible tendency to malice and chicanery during the process of digestion, from which he is radically relieved by each alvine evacuation, we are led to suspect that the connection between the visceral disorder and the mental state is more than that of a mere coincidence. And when we discover in another patient who, already depressed by veritable causes of grief, contracts a gastric catarrh; and every time the burning feeling rises in her throat—and at no other time—indulges in the delusion that she is being burnt, we become inclined to admit that visceral disorders may excite a marked modifying influence on an existing mental disorder.

Lord Byron² stated it as his belief that body and mind are in indissoluble wedlock, for after a fit of indigestion he experienced a complete inertia of all his mental faculties. It is a notorious fact that dyspeptics are as pessimistic as sufferers from pulmonary trouble are optimistic. The dyspeptic indulges in a selfish interpretation, and according to his previous temperaments, he will, if this were

choleric or sanguine, become quarrelsome, irritable and snappish; if it were lethargic, he will be inclined to somnolence; if it were melancholic, he will become melancholy or hypochondriacal. A marked disinclination to exertion is often noted particularly after meals, and in not a few cases, especially if gastric dilatation³ be a complication, hallucinations and illusions are noted to occur either only after certain injuries or irritating ingesta, or at the acme of the digestive process.⁴ The influence of stomach disturbance on the mind is too often underrated by practitioners of medicine. Not a year ago, a prominent medical practitioner of St. Louis committed suicide in consequence of spasmodic seizures due to hour-glass contraction of the stomach.⁵ Probably no other single organ is responsible for so much subjective misery. There are patients in the practice of every physician who are as bright and cheerful on peptonized milk, as they are unhappy, wretched, and tired of life on fried potatoes and pork cutlets. Such patients soon become morbidly self-observant; the occurrence of a flatus, or an eructation, is anxiously noted; an easy evacuation is triumphantly extolled; a coated tongue plunges them in the deepest dejection. Add to this that the general nutrition may be suffering in consequence of the gastric disorder at this time, and the effect of this continual brooding may be anticipated. Many a testy hypochondriac has no other discoverable cause for his mental disorder than a protracted gastric catarrh. And his mental state is a veritable barometer of the better or worse condition of his stomach.

The extreme re-action against the views of the ancient writers occurred before the time when the grave, nervous consequences of abdominal disease were understood. Certainly, if Griesinger and his followers had borne in mind that apoplectiform vertigo may occur from a comparatively slight gastric disturbance, that speech difficulties may appear in dyspeptics, and at no other time than after meals, they would not have so arbitrarily designated that phase of alienism, when the visceral state was carefully studied, as "copro-psychiatry." As a rule the *ego* of the dyspeptic is not materially affected, the mental faculties are not impaired in form. But in a large proportion of cases there is an inability to exert the will powers, even to carry out so simple an act as the picking up

¹ Annales Medico-Psychologiques, 1857, pp. 105, 114, 273, 424, 436, 450.

² Journal, 1821.

³ H. Duehou-Doris; *De quelques troubles cérébraux liés à la dilatation de l'estomac*. Thèse de Paris, 1887.

⁴ Hardy, *Gazette des Hôpitaux*, 1885, No. 107.

⁵ N. Y. medizinische Presse, 1888, No. 1, p. 37.

of an object that has fallen from the listless grasp. In a few cases of this kind the memory and speech are inhibited after meals. In others cutaneous hyperesthesia develops, peculiar reflex symptoms, numbness of the hands (especially of the left), precordial oppression, and pain to the left of the fourth to seventh dorsal vertebrae are added, and the already melancholy patient develops all sorts of hypochondriacal fancies.

Recent observations tend to show that the liver, erroneously regarded as related to melancholia by the ancients, does exceptionally occupy an etiological relation to mental disorder. The philosopher de la Mettrie,¹ protégé of Frederick the Great, referred to such a case, in which the only lesion found after death² was an hepatic abscess. Hammond repeatedly aspirated the liver, and in some cases with remedial results—obscure abscesses, whose existence had not been determinable by any of the usual signs, having been the sole cause of a depressed mental state. He claims that vertigo, insomnia, transitory confusion of ideas, inability to concentrate thought without aggravating the symptoms mentioned, and great depression are the characteristic symptoms. Cyr has reported³ a number of cases where attacks of hepatic colic were followed by a stupor which almost approached a coma in degree. He attributes this state on account of its intimate alliance with the attacks of colic and brief duration, rather to the effect of the painful state on the nervous system than to any toxic influence excited by the biliary ingredients in the circulation. That acute yellow atrophy of the liver is often accompanied by furious delirium, in which the patients strike and bite at the bystanders—a delirium of high intensity and remarkably brief duration—is a recognized fact of hepatic pathology.⁴

Diseases of the peritoneum are as exceptionally enumerated among the causes of mental disease. Thus, Bergmann⁵ found a scirrrous degeneration of the epiploon in a case of stupor. A most remarkable case is published by Barrey.⁶ The patient experienced repeated attacks of melancholic frenzy, and in the interval exhibited a passive melancholia marked by an intense ex-

pression of agony. Progressive wasting ensued, and the patient manifested a marked repugnance to covering of any kind, and threw off his clothing and the bed-covers, so that for months before his death he lay naked. Aside from vague complaints about his food, and desire to see his family, his only spontaneous utterances were demands for prolonged baths and that his abdomen be opened to remove some injurious substance there. The patient's feelings were clinically truer than the diagnosis of his physicians. He had the habit of bending forward and clasping his hands over the epigastrium, but repeated careful examination failed to show any special morbid condition. He died after a seven months' sojourn in the asylum. The peritoneum was found to be thickened and degenerated, agglutinating the various folds of the intestines, thus forming a common mass, everywhere permeated by a blackish-green liquid. Two large pouches filled with this fluid were found; the intestines showed advanced putrefactive change, but evidently the morbid process had antedated the asylum sojourn.

The rectum plays a very modest part in the etiology of insanity. The older writers assigned to hemorrhoidal diseases a very prominent rôle in the natural history of hypochondriacal and paralytic mental disorder. The presence of hemorrhoids in the insane is to-day regarded either as an accidental coincidence, or at most as a collateral feature of the "arthritic and herpetic diathesis" as Charpentier⁷ recently designated it. In a few cases there seems to have been a direct relation between the mental state of melancholic patients and their rectal disease. One of my patients had for fifteen years suffered from so profound a degree of atony of the rectum, that she had frequently to resort to the disgusting procedure of removing the faeces *propriâ manu* when they were hard; when they were soft she suffered from active incontinence. During this time she has at various periods had fears of having Bright's disease, phthisis, etc. Finally, great depression developed, she became very irritable, and often whilst the noise of children playing annoyed her, an "inner feeling" urged her to commit suicide. On examination a marked prolapse of a rectal fold was found, and it was recorded that every exacerbation of her mental symptoms was preceded by an aggravation of the irritation connected with this prolapsus. She had considerable tym-

¹ Ouvrage de Penelope II, cited by Pick; *Jahrbücher für Psychiatrie* I. p. 56.

² *Neurological Contributions*, Vol i, No. 3, 1881.

³ *Union Médicale*, 1882, No. 63.

⁴ Legg. *The Bile, Jaundice and Biliary Diseases*, 1880.

⁵ *Allgemeine Zeitschrift für Psychiatrie*, 1845, Vol. II.

⁶ *Annales Medico-Psychologiques*, p. 506. 1868. Series 4. Vol. 7.

⁷ *Proceedings of the Paris Medico-Psychological Society*, Nov. 29, 1886; reported in *Annales Médico-Psychologiques*, April, 1887. P. 283.

panites, was greatly annoyed by borborygmi, and experienced a burning feeling from head to foot, latterly accompanied by sharp pains in the limbs on such occasions. In a case of melancholia complicated by a rectocele, reported by Nolé¹, suicide was perpetrated. Each exacerbation of anxious melancholia was preceded by lumbo-sacral pain, which gradually rising in severity, at length caused the patient to cry out in despair and to beat her eyes with her hands. This condition of frenzy passed into one of morose taciturnity, in which she stared fixedly at the ceiling.

I have seen a number of cases, in which cardiac palpitations, spells of anxious terror and impulsions to suicide, followed by reactionary self-reproach and intermingled with morbid fears, were due to a conjoined dyspepsia and rectal trouble. In one such case there was abnormal narrowness of the rectum, and a radical cure followed the dilatation of both sphincters. In another, where the ingestion of hard meat infallibly provoked the attacks of terror, it was observed that very severe seizures were followed by a diarrhoea which the patient had come to regard as critical.² Kish³ reports similar cases in which he determined arrhythmia of the pulse during the spells of terror, and which he claims were relieved by the waters of Marienbad.

There is a peculiar condition observed chiefly in young girls about the period of puberty, which, whatever its original course, is intensified and modified by the state of the stomach. This state does not appear to be continuously pathological, for in cases in which death from starvation had ensued, that organ was found to be apparently normal. It seems to be rather a functional perversion. A patient of this class develops a slight dyspepsia and, rendered morbidly sensitive by the existing predisposition to nervous disease, usually present in their families, and doubly so by pubescence, she contracts a positive dislike for food. Improper food causes distress, the tonics, appetizing cordials and chalybeates with which a mistaken therapeusis drenches her, aggravate the trouble, and dislike is metamorphosed into a belief that food is injurious. All the patient's energies are devoted to the one end of resisting the introduction of food, and the morbid concentration on selfulti-

mately leads to the development of a full-blown delusion that God has forbidden her to eat. Meanwhile the stomach, originally perhaps but very slightly diseased, ceases to present any signs of gastric catarrh; yet the patient does not resume eating, but goes on living for months and months on an occasional sip of water, tea or broth, and is visited by crowds of the marvel-loving majority as a so-called "fasting girl." The proper place for such a patient is the asylum, where the apparatus for forced feeding employed with readily assimilable food would soon overcome the starvation, and the delusion that led to it. The stomach-tube has performed even greater wonders, if we are to credit the claim of Schüle, that the recovery of a hypochondriacal paranoiac whose attacks of dyspepsia were relieved as soon as the cesophageal sound had passed a certain point where there was resistance, was due to artificial feeding.⁴

Much interest attaches to the influence of intestinal parasites on insanity. That these are competent to provoke a variety of nervous troubles, such as chorea, eclampsia and epilepsy, is well known; but that there are well established cases in which actual insanity ensued is ignored by the majority of recent writers. The rapid cure of the mental disorder following the expulsion of the parasites is the significant proof that the etiological assignment was correct. Acute, sudden explosions of mania, hypochondriacal states, with or without eclampsia, are found in these cases. I have myself seen only the mildly hypochondriacal variety, and that with tapeworm. Rolland⁵ relates the following convincing case of insanity: A man, aged thirty-eight, after becoming fatigued at his work, experienced an unusual malaise, confusion of ideas, writing and speaking at random, showing a profound change in physiognomy, his eyes being injected, and making aggressive attacks on his surroundings, of which he lost the remembrance. He vomited a large ascaris at the height of his disorder, and the relief was so rapid that an emetic was given him, and after the vomiting of two more he recovered entirely. As a rule, the mental disorders associated with worms, if of an acute type, are either complicated with convulsions, or, as in the case just related, they are of an epileptiform character. The intestinal parasites which have their habitat low down in

¹ *Journal des Connaissances Médico-Chirurgicales*, January, 1845.

² It is not impossible that in one of my cases a toxic influence had played a part in the etiology of the nervous and mental disturbance. The gastro-intestinal trouble dated from a fish-meal, which had been followed by vomiting, prostration and diarrhoea.

³ *Berliner klinische Wochenschrift*, April 1, 1887. P. 261.

⁴ Report of the ninth meeting "Wanderversammlung der Sud-West Deutscher Neurologen und Irrenärzte. *Archiv für Psychiatrie*, XV, p. 828.

⁵ *Journal de Médecine de Toulouse*, Mai, 1845.

the bowel, notably the oxyuris, bear a less direct relation to insanity, where either by general irritation or by crawling into the genital passages of children, they provoke masturbation, and the latter habit leads to the development of insanity from self-abuse.

The clinical characteristics of insanity due to chronic disease of the digestive tract is depression. This depression has rarely the emotional depth of typical melancholia. To express myself coarsely, I would say, the true melancholiac is horrified at life; the dyspeptic melancholiac is disgusted with it. The true melancholiac is so intensely unhappy that he cannot muster up courage enough to hope for relief; the dyspeptic melancholiac is but too ready to try every new remedy or doctor—alas, too seldom willing to follow rational and necessary dietetic directions. Another characteristic feature of the mental disturbance due to visceral disease, is its rapid change in such remarkable parallelism with the somatic state. The patient who feels comparatively cheerful up to eleven in the morning, becomes snappish, ugly and irritable as he awaits the hour of the noon-day meal. While eating, his cheerful condition returns; but at a period varying from a few minutes to an hour after meals he again becomes wretched, confused, incapable of exertion, desperate, anxious, filled with morbid fears and evil forebodings. Imperative conceptions and *folie du doute*, are often found; but they are probably due to nervous prostration brought on by the co-existing insomnia. This condition reaches its height between two and three hours after meals, to entirely subside with the next visit to the closet. Where the peritoneum is affected, and in relation with insanity, the pinched, painful expression of the countenance has been remarked, while with intestinal parasites the dilatation of the pupils, peculiar pallor and aggravation of the symptoms coincidently with or after borborygmi, direct attention to the source of the trouble.

The various diseased conditions above referred to stand in a direct causal relation to insanity in but a small proportion of cases. More frequently their presence modifies special symptoms developed in those insane from other causes. Thus it has been noted that gastro-intestinal disease occurring in a depressed lunatic is very likely to determine the delusion of being poisoned, and thus lead to refusal of food and voluntary starvation. Hepatic disease aggravates, if it does not provoke depression. Cancerous disease in delusional lunatics sometimes determines the illusion that there is a wild beast in the

stomach. The influence of intestinal stricture, of epiploic bands and peritoneal adhesions in modifying the superficial expression of insane beliefs is notorious. One such patient under the author's observation claimed that he had a "doctor in his belly." Esquirol relates the case of one who asserted he had a whole council of popes and all the personages of the New Testament in the same cavity. The study of such symptoms is, however, more interesting than profitable, for they do not expose any essential relation between cause and effect, but merely an accidental feature of disease. The lunatic who, because he feels flatus move from coil to coil of his gut, struggling to pass constricted or agglutinated segments of the same, believes that there is a living thing within him, suffers from a lack of observing and reasoning power, which, in the absence of the visceral disorder, would cause him to base an equally absurd delusion on the observation of some outside occurrence. The operation of visceral disease in the production of mental disease in persons of previously sound mental health and sound antecedents is extremely limited, if not nearly *nil*. But it plays an important rôle as an exciting cause in many of our neurasthenic and hereditarily predisposed patients. Proper attention to the somatic disturbance is often therefore attended by results which strike the patient as magical. The relief of a gastric catarrh causes the disappearance of anxious terrors; of a constipation, of morbid fears; the expulsion of worms, of a distressing convulsive or maniacal disorder.

712 Lexington Ave., May 26, 1888.

SMALL DOSES; THERAPEUTIC CONSIDERATIONS.

BY JOHN AULDE, M.D.,
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The short paper on "Small Doses," recently published in this journal, having met with a flattering reception, not only in this country but abroad, I have thought it advisable to continue the discussion by the presentation of some further therapeutic considerations. My object in so doing will be appreciated by a reference to the various views which have been advanced as to the *modus operandi* by which the therapeutic results of small doses are obtained. To illustrate: It is claimed by some that these small doses are potent remedies by reason of their frequent repetition; by others, that the method of

preparation, long continued trituration or succussion, and consequently thorough subdivision, accounts for their efficiency. Again, it is argued that small doses act by substitution—a theory which in itself is rather contradictory. Some who practice this method empirically would have us believe that no reason is needed further than the established fact of their almost universal success, while the homœopathic fraternity asserts that we are trenching on their domain; and last, but not least, the dosimetrists say that it is simply an attempt to reduce the practice of the healing art to a system of mathematical exactness, a work in which they have been enthusiastically engaged for the past fifteen or twenty years. A systematic review of these claims need not be undertaken here, as the intelligent and conscientious physician will have none of them, except that he will prescribe empirically remedies which he knows or believes will be instrumental in relieving suffering and curing disease. Better reasons, however, than either of the foregoing must be advanced before the majority of the profession will show a willingness to discard polypharmacy; and no doubt these will be forthcoming, but the inventor must be prepared to run the gauntlet of adverse criticism.

What I have to say at present will be confined chiefly to the therapeutic action and effects of small doses, referring incidentally to the physiological action in so far as the physiological effects point to the therapy, bearing in mind meanwhile that the physiological action of a remedy is modified by diseased conditions. Thus, in the use of electricity, it is well known that disease has the effect of reversing or transposing the physiological order of manifestations, as illustrated in the reactions of degeneration. Again, nitroglycerine is classed as a paralyzer, and we are taught that it may be given with advantage when it is desired to paralyze the vasomotor system: a fallacy which requires no further investigation than a reference to the cases in which it has been used to restore apparently moribund patients to life, as in the case of opium narcosis, asthma and other conditions which need not be mentioned. The actual results are not in accordance with theory, and the deductions of experimental physiologists fall to the ground. It has been said that, "The most effective way to explode a popular fallacy is to explain it," and nitroglycerine and electricity appear to offer special inducements. Macaulay is accredited with the observation that, "As the world gains in exact knowledge it must lose in imagination; the moonlight of fancy giving way

to the sunlight of fact, and the creative faculty yielding place to the spirit of investigation or criticism."

Physiology, like politics, makes strange bed-fellows. Strychnine, said to be a stimulant to the nervous system, is in reality, not a stimulant at all, and we are taught that in the case of the ingestion of a lethal dose of this so-called stimulant, with the appearance of tetanic spasm, that its congener, electricity, another pseudo-stimulant is barred, as although the spasms are overcome, the patient dies. Under the same conditions, section of the spinal column overcomes the tetanic rigidity, but the unfortunate sufferer is as effectually paralyzed as when electricity is used. On the other hand, nitroglycerine, which in some respects acts in an opposite way to that of strychnine, stimulating the entire vascular system, and even raising the dead, to all intents and purposes, is classed as a paralyzer. Electricity, which is daily reaping its victims in connection with electric lighting, now known to be a potent remedy in extra-uterine pregnancy, and acknowledged even in small medicinal doses to act as a paralyzer when long continued, has long been regarded as a stimulant, and such is its present position. As a correlator of nerve-force it kills, a paradox difficult to understand.

In defence of the tenets held regarding electricity and strychnine, it may be suggested that the action of these remedies in small or medicinal doses is different from the action when large doses are used, a claim which would endow them with an unusual degree of fugaciousness, wholly unsupported by the facts. The truth seems to lie in the direction of limiting the physiological action of a remedy to one positive and distinct line of manifestations in health, the effect being modified by an increase or diminution of the dose, or by "the inter-action of the different parts of the body on one another" (Brunton). In disease, the action of the remedy will depend upon the pathological conditions present, and the tissues or organs affected may be acted upon in a manner similar to the physiological action in health; or the reverse may be true. Thus, Ringer says: "Strychnine affects paralyzed sooner than unparalyzed muscles;" but the fact is that strychnine does not affect the muscle in the least directly. The muscles supplied by enfeebled nerves are the ones first to show twitchings and spasm from both strychnine and the electric current, and were these agents true correlators of nerve-force it is only reasonable to suppose that their stimu-

lating action would first be observed in muscles supplied by healthy nerves. Let this serve as food for thought, a subject for investigation or criticism, and possibly the fallacy may be exploded by explaining it.

Were I disposed to enter upon an investigation of the physiological action of drugs, no better text could be found than the general principles laid down by Brunton, as indicated by the following catch-words: The interaction of various functions, direct and indirect action, local and remote action, relation of effect to quantity of the drug, dose and mode of administration, cumulative action, the preparation—pills, powders or liquids, effects of fasting, habit, temperature, season, climate, and time of day. Dr. Brunton also says (page 37), "The attempt to ascertain the precise mode of action of a drug by its *simple* administration, either to a healthy man, or to healthy animals, and observations upon them, is hopeless." Our great object, then, in the practice of the healing art, is to determine the uses and value of remedies as applied in the treatment of disease: clinical therapeutics. The secret of successful therapeutics is in knowing the effect of drug action in disease, and in understanding the demands of the economy in the case of complications.

This brings me to the question in hand: Can the use of small doses be explained upon any reasonable basis in accordance with modern physiological laws, with pathological changes as a factor to be taken into consideration; or shall the method be condemned as on a par with the late sensational announcement of M. Luys, concerning the alleged action of "*Médecines à distance*?" The readers of this journal are no doubt familiar with the conclusions of the commission appointed by the Academy of Medicine of Paris to investigate the truth of the report, and it is to be hoped that my views, although novel, yet not altogether new, may prove more substantial than those of the fanciful Frenchman.

The following extract from a clinical lecture on "Lithæmia with grave nervous symptoms" (REPORTER, May 5, 1888, page 573), has been re-arranged and slightly modified to indicate the direction taken in the course of my investigations. The words in italics are my own; those enclosed in parentheses form a portion of the lecture as it originally appeared. While the changes are but slight, and do not fully elucidate my theory, there is a marked difference as to the assumed pathological conditions and the train of circumstances leading up to the ultimate objective symptoms. The case under consideration

is that of a patient suffering from right-sided convulsive seizures—consciousness being unimpaired—denominated "hemi-spasm."

"Their occurrence *may be* (is) ascribed to the irradiation of powerful *occult influences* (motor impulses) proceeding from nervous centres, which are kept in an almost constant state of irritation and excitement by the morbid condition of the blood which *fails to nourish* (nourishes) them. From time to time there occur periods when defective coördination between the great abdominal viscera, the kidneys, liver and stomach, is followed by serious vitiation of the blood. The processes of secretion and excretion are interfered with or temporarily suspended, and the blood becomes loaded with effete products which, when in sufficient quantity, quickly manifest their power of exerting an actively poisonous influence, *destroying nerve-function*. The nervous centres, bathed in this toxic fluid, become intensely irritated; they become even more morbidly sensitive than usual, until finally, when nervous *control is suspended*, (tension has reached a point beyond which it cannot go,) there is a sudden explosion of force manifesting itself in these violent muscular contractions. At such moments, comparatively slight causes are sufficient to overthrow all *controlling* (inhibitory) influence, and give free reign to these irregular exhibitions of *muscular energy*. In this particular case these phenomena are brought out with exceptional clearness."

Having these observations before us, let me now proceed to examine the action and the effects of the three remedies already mentioned.

Nitroglycerine.—In the previous paper the types made me say this remedy in drop doses every five or ten minutes might be given for the relief of certain kinds of headache. Of course, the one per cent. solution was the preparation referred to, instead of the pure article. Exception has been taken to this recommendation on the score of its not coming within the category of small doses, and to a certain extent this is true. A few words of explanation, however, will serve to set the matter in its proper light. Five years ago a gentleman over sixty consulted me for a headache which had persisted for several weeks, although constantly under treatment. He was ordered to take that evening before retiring one drop of the one per cent. solution, in water, every five minutes, until six doses had been taken. He did this, and the result was that he felt all right the next morning, although later in the day the same symptoms showed a disposition to

return. Accordingly, the medicine was repeated the following evening, with perfect and permanent relief. Some years ago a medical friend related to me his experience in a similar case. The patient was a young man, and was put under treatment in the office one afternoon. In the course of an hour and a half fifteen drops of the one per cent. solution were administered, when the patient experienced a sensation as if something in his head had cracked, causing a loud report. The headache had vanished, and no bad effects or unpleasant sensations remained. Last autumn I saw a gentleman with phthisis pulmonalis, who had not slept an hour, night or day, for twelve weeks, on account of cough and irritable condition of the throat. From eight o'clock in the evening to ten, he took eight drops of the one per cent. solution, and slept comfortably all night, except that he was awake several times; but there was no troublesome cough. Instead of rising at daylight, as was his custom, he lay abed that morning until nearly nine o'clock. He spent a very comfortable day, and has not had any serious trouble with the throat since. This occurred last November, and the year preceding that time he had been under the care of four different physicians who had signally failed to relieve him. Large doses, five drops every three hours, are recommended by Dr. W. John Harris (*Therap. Gaz.*, May 15, 1888) in tubal nephritis with fever, dropsical effusion, and albuminous urine with tube casts.

Small doses of nitroglycerine may be given with great benefit in the case of embarrassment of the respiration and cough accompanied by a feeling of constriction about the throat in acute and chronic catarrhal affections (bronchial), in catarrhal pneumonia and in catarrhal phthisis, either with or without profuse expectoration. Two, four or six drops of the one per cent. solution should be added to four ounces of water and a tea-spoonful taken every two hours. An elderly woman suffering from catarrhal pneumonia of long standing, accompanied by constant hacking cough said, the day following the use of this solution, that she thought she had a new throat, so great was the relief. It will be observed that the dose here is 1-1600, 1-800 and 1-500 drop respectively, quite small enough to satisfy the most exacting.

An interesting case occurred to me a few months ago. The patient, a laboring man, or superintendent in a factory, had been suffering for more than a year from pain and stiffness in the muscles of the back of the neck, along with an unpleasant sensation in

the occipital region. He said the pain in the head felt as if some one had taken hold of the brain and was twisting it around. His trouble was for the most part constant, as bad in the morning as at night, and was not influenced by taking food. After this long siege, and having gained no relief from the ministrations of several physicians, whose directions he had religiously complied with, he came to me. One drop of a one per cent. solution of nitroglycerine three times daily caused the pain to vanish in two days, and at the end of a week the medicine was discontinued. I should add that for the first few days the medicine affected him rather unpleasantly for the period of half an hour after each dose. Several weeks later this gentleman took a bad cold, which caused a return of the head trouble to some extent; but it was of short duration and was fully relieved by half-drop doses three times a day.

Now, assuming that pain is an expression of impeded and imperfect nerve energy, rather than of heightened nerve function, this remedy acts as a vaso-motor stimulant, increasing the supply of blood to the affected nerves, and by this simple means extinguishing their hungry cry (Valleix). In the case of lithaemia cited, we have seen how the sensibility of the nervous system may be obtunded to such an extent as to cause violent muscular contractions. At other times this abnormal condition may manifest itself in the shape of pain. How often do we witness subsultus in low fevers, twitching of the muscles, rambling and delirium, all due to depression of the nervous system, relieved by suitable pabulum in the shape of stimulants, or held in abeyance by calmative hypnotics or anodynes. These observations clearly point to the correctness of the theory that the function of nerve-force is not to stimulate, but to restrain and control muscular activity, a matter which will be more comprehensible when we consider the uses of electricity and strychnine.

[TO BE CONTINUED.]

AMENORRHAEA AND ITS TREATMENT.

BY WILLIAM B. DE WEES, M.A., M.D.,
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The absence of the menstrual flow in a woman in whom it should naturally exist constitutes the symptom known as amenorrhœa. This term is, however, also applied to designate the absence of the catamenia for a considerable time after the regular

monthly epoch, in a woman who previously menstruated regularly. Thus we have, technically speaking, two great varieties of amenorrhœa, as commonly reckoned: (1) *emensio mensium*—when there is complete absence of anything like menstruation for a long period after the usual time for its appearance; (2) *suppressio mensium*—when the catamenia are obstructed in their regular periods of recurrence, in a woman in whom menstruation has been established.

Amenorrhœa is not a disease, but a symptom of a great many abnormal conditions of the system, the chief of which is chlorosis. This chlorotic state, as the fundamental cause of amenorrhœa, is of great frequency among women who live luxurious and indolent lives, and in this way disorder the nervous system and the circulation. Hence we encounter it for the most part among women in the higher and more wealthy classes of civilized society. Chlorosis is to be easily recognized by the whitish-green hue of the skin of the patient, the absence of a red color in the lips and mucous surfaces, the presence of languor, listlessness, depraved appetite and impaired digestion, constipation, palpitation, etc. There are also other symptoms and physical signs of serious systemic disturbances, among which may be mentioned a bellow's sound, heard almost invariably over the heart. This murmur is continuous in the larger arteries, especially the carotids and subclavians, and is reinforced by each systole of the ventricle. This sound is very similar to the *bruit* coincident with enfeebled circulation, as after copious hemorrhage. The blood when drawn from a vein is thin, light-colored and deficient in red corpuscles and in iron, while the clot is less proportioned than in health, etc.

The best method of treating amenorrhœa (*emensio-mensium*) is a very important matter. The true physician, having for his highest ambition "to aid nature," when called upon to treat amenorrhœa, must keep in view the cardinal points of his compass. He must keep in view first and foremost the three elements which must exist in a perfect state of health for the normal performance of the function of menstruation, viz.: 1. The ovaries, uterus and vagina must be normal in form and vigor. 2. The nervous system governing the relations between these organs must be perfectly healthy. 3. The blood must be in its natural healthful state, both in quantity and quality.

It will thus be seen that amenorrhœa is the symptom of a disordered state of one or

more of these three elements, regardless of what the varied and numerous causes producing this disordered state may be; and that to successfully treat such cases, it of necessity requires the removal of the causes producing the disordered state, and in the next place to aid nature in restoring lost function.

The very first step, then, in the treatment of these cases is to be satisfied by a thorough examination as to the condition of the organs involved. Being satisfied in this particular, the second and third elements are to be studied simultaneously, since whatever benefits and improves or invigorates one effects the other proportionately. Thus we may first place at the top of our programme good, wholesome, nourishing and easily digestible and assimilable food. Milk, fresh beef, bran bread, eggs and fruits must form the greater portion of the dietary. Next in the order of importance are hygienic influences in the strictest sense of the term. The patient should pass as much time out of doors in the fresh air and sun-shine as possible. The danger is in the house, and not out of it. Regular and systematic bathing followed by a thorough rubbing—sea-bathing is preferable; exercise of any and all descriptions on foot, on horse-back, by rowing, calisthenics, etc., the association of cheerful and pleasant society, change of scenery and climate, overland route or sea-voyage, etc., and last but not least, early retiring to bed in the evening (9 o'clock) and early rising in the morning (5 o'clock). These principles strictly carried into execution would in the large majority of cases probably prove all that would be necessary to aid nature in making full restoration.

But do what we may, it is impossible to secure harmonious action on the part of these patients as a class, in executing the instructions fully; hence we are forced to resort to medication as an adjuvant or auxiliary to the treatment. Just here is where a large portion of the practitioners are forced to hesitate, as to the better remedies or combination of medicines to be prescribed. In this connection I beg leave to say that I have treated no less than several hundred cases of amenorrhœa, of the two varieties above defined, and while I founded the management of all my cases upon the foregoing general and fundamental principles of treatment, I have used in addition, in a large portion of my cases, the following medication, and am unable to recall a single case in my experience in which the treatment was not crowned with success. I first prescribe:

R Liquor ferri et quininæ citratis f³j
 Liquor potassii arsenitis. f³ij
 Atropinæ,
 Strychninæ. f³ij. gr. ss
 Elixir aurantii q.s. ad. f³vij

M. Sig.—Teaspoonful in water, before meals, three times daily. The ingredients or dose to be increased according to the tolerance of the patient.

This is continued in cases of emenio-mensium, until there is manifested the peculiar menstrual malaise, or some slight show, when I discontinue it and prescribe:

R Potassii permanganat. gr. x
 Ft. pil. No. x, compressed or in capsule.

Sig.—One pill followed by one-half glassful of water before meals, three times daily.

Also :

R Manganesii bin-oxidi. gr. x
 Ft. pil. No. x, compressed or in capsules.

Sig.—One pill after each meal, three times daily.

By the second or at most the third day after taking these, the flow usually becomes fully established. If the manganese does not fully effect this at the first attempt, we have, however, a stated period from which calculation can safely be made for the next period. The first prescription is relied on during the interval, and the pills commenced about three days before to the expected time.

In cases of supressio mensium, I usually, simply rely on the permanganate of potash and bin-oxide of manganese as just stated, and have found the combined use of these two salts all that can be desired for an emmenagogue. The first is a direct emmenagogue, stimulating the uterine muscular fibre; and the latter is an indirect emmenagogue, improving the blood and toning up the nervous system. I have in a number of cases of strong, robust and large women, used these salts in two grain doses. In two patients, who were women of culture and refinement, wealth and influence, I was repeatedly assured by them that they were positive of no conception having taken place, but after three days use of the drug in one case, and four days in the other, I was in both cases hurriedly summoned. I found them in a high state of fever, 102° and 103° respectively, with quick pulse, emesis, spasmodic and painful contractions of the uterus, diarrhea with some tenesmus, frequent micturition with attendant strangury, a flushed and hot surface of the entire body—indeed the skin in the face assuming an erysipelatous blush. The conjunctiva was congested, the pupils somewhat dilated. I gave a hypodermic injection of morphia to allay the irritation, which it gradually accomplished, and the alarming symptoms subsided, with the ex-

ception of the uterine contractions; these continued, but with comparatively little pain until the following night, and then finally ceased after bringing away a two months embryo in the one case, and a three months embryo in the other case. The drugs had been administered three days in the first and four days in the second case, in doses of two grains each. The period of gestation was afterward fully acknowledged by each mother respectively, who also confessed that they had designedly concealed their pregnancy with the purpose of obtaining a miscarriage. This result must be attributable to one of two things: Either it was due to an untoward effect or physiological action of these drugs. Idiosyncrasy is out of the question, since both these women had been treated before with permanganate of potassium, and other drugs separately, by several physicians with no effect whatever. Or, on the other hand, there must be an action resulting from the combined administration of these two drugs, which produces a peculiar or more powerful effect, than either of them does when administered alone. For in these two cases they proved true ebolics, for I have never witnessed such a peculiar and powerful oxytocic action from ergot or any drug, and it persisted even after morphine had been duly administered.

PREPARATION OF MILK IN SUMMER.

BY E. A. WOOD, M. D.,
 PITTSBURGH, PA.

The time is here for the summer complaints of childhood. Thousands of children were lost last year—shall the Angel of Death again cast his annual shadow over our homes? Have we learned anything since last year, and are we more competent than ever to stay the slaughter of innocents—the slaughtering that is a disgrace and a crime? Do we know of even one thing, trifling though it be, that shall assist in carrying children through the perils of the heated term now on us? That others may be encouraged to publish the facts and opinions in their possession bearing on the subject, I offer one small suggestion on the subject of infant feeding.

When human breast milk cannot be had in any case, procure the best cow's milk; get it fresh morning and evening; keep it in a cooler in which nothing else but ice is kept; keep that cooler out of doors in the shade, or in an open hall or room, and not in a closet, pantry or cellar. Take one pint of milk and divide it in two equal parts;

separate the curd from one-half, either by heat or by heat and calf's rennet—the latter preferably, because it not only more quickly separates the whey and the curd, but rennet is a real digester, and better than any artificial pepsin. Take the whey so separated, add it to the other half of the pint of milk, and feed as the child needs.

Several modifications will suggest themselves to the intelligent practitioner. Those who have faith in *pepsina porci* may use it to partially digest the whey milk. When this is done, the whey milk should be boiled to stop complete digestion. My experience is that fresh milk from grass-fed cows is more easy of digestion without being boiled. When the milk is not of that kind, and to destroy bacteria, it is perhaps better to boil it. The thing I wish to bring to notice is that weak stomachs can digest milk containing *half* its curd, but cannot digest all the curd. Life is too short to spend in arguing the advantages of whey over water as the diluent of milk. Those who cannot feel the force of such a procedure should continue to use water to dilute cow's milk. Milk whey has gone out of fashion, but whey will come in again, not as a fashion, but as food commanding itself on principle and practice.

Milk whey is a much better fluid than water to add to the many preparations of beef in the market. Try it.

Every practicing physician should have a small food laboratory at his home, where he can experiment, and learn for himself the behavior of foods, and how to modify them for the requirements of his patients.

SOCIETY REPORTS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, May 23, 1888.

Therapeutics of Diphtheria.

In opening the discussion on Dr. Jacobi's paper (see pages 797, 829), and on Dr. O'Dwyer's (see page 806),

DR. WILLIAM PEPPER said: The evening has been so well occupied in listening to the two important and unusual papers—to me most instructive—that there remains little to say in the way of discussion, save as to courteous appreciation of the kindness of our visitors and of our debt to them. I rise, then, simply to express our appreciation of the great wisdom of the advice to which we have listened.

In regard to the last paper, I wish to add my mite of evidence to the value of the operation introduced by Dr. O'Dwyer. It is destined to fill an important place for these reasons, if for no others: that you can induce parents to assent to intubation, when it is impossible to secure their assent to tracheotomy; that in very young children in whom, as we know, tracheotomy is so difficult an operation, intubation can be performed with great facility; and finally, in septic cases, here is an operation for restoration of breathing space by means of an artificial air-tube which does not involve an abrasion of the surface to tempt extension of the infectious process.

From the masterly address of Dr. Jacobi, I am sure that every person present has derived much instruction and much pleasure—stamped, as it has been from beginning to end, with the accents of earnest truth, with the richness of practical experience. It is precisely these details to which Dr. Jacobi has called attention, that are of the highest importance in the issue of our cases. If he had done nothing more than warn us of the danger of relying too implicitly upon trained nurses, he would have done a service. As with every new instrument of precision, after its value has been demonstrated, comes a period in which there is a dangerous tendency to rely upon it too exclusively; so with trained nurses, if we trust too implicitly to their unsupervised discretion, we are consigning our patient to more vigorous, and, therefore, more dangerous ministrations—because equally unskilled—than the untrained solicitude of parents and friends. And this must continue to be the case until a longer and more thorough course of study is insisted upon. So, too, with the high importance of a radical treatment of antecedent and neglected—because apparently trifling—lesions, which the lecturer has emphasized. It is well for us to bear in mind the warning that tonsillar hypertrophies, nasal catarrhs, and the like may tempt the localization of diphtheria, and I may add of scarlatina and of measles in time of epidemic.

The extreme value of iodoform in local treatment I can confirm. Soluble in ether, miscible with glycerine and with oils, capable of use as powder, it is the best of all local applications, and may be applied to all cases and conditions. I would, however, interpose a mild protest against the too sweeping condemnation of the steam atomizer. Used with that gentleness, so wisely insisted upon, and the confidence of the child obtained, the relief to oppression is so soon recognized that we can secure intelli-

gent coöperation in its frequent and regular use. The problem of internal treatment is the most difficult one, a problem which largely and continually occupies our thoughts. I have been glad to hear Dr. Jacobi's clear and outspoken adherence to the mercurial treatment, although he limits it to a certain group of cases. My longer experience has but abundantly confirmed my early impressions of its value—preëminently in laryngeal diphtheria whether primary or descending; and I am constantly impressed with the tolerance of children to the bichloride, and equally to the mild chloride. But I would go further than the lecturer. If in a form conspicuous as a dangerous one, which is usually not primary, but associated with rhinitis and fauces, this treatment proves efficacious, why is it not equally good where the nasal or faecal disease has not extended into the larynx? I have found cases of nasal diphtheria which were a source of great anxiety yield in a most remarkable way, and it has seemed to prevent the local spread as well as septic infection.

I agree with Dr. Jacobi that it is well to begin treatment with the chloride of iron, and that the association of chlorate of potassium is a matter of comparative indifference, and that large doses should be given at short intervals. But I have not been so fortunate in seeing it usually well borne by the stomach. When gastric or intestinal irritation manifests itself, it is well to stop the iron abruptly and to substitute mercurials. Or, when in the beginning of a case the glandular involvement, the faecal tumefaction, the constitutional symptoms, give evidence of rapid sepsis, we cannot depend upon iron and must give the corrosive or the mild mercurial chloride at once.

In an address covering so wide a field there is much room for difference of individual experience. In threatened heart failure, I would appeal for the early administration of strychnine, which I place above digitalis or sparteine or ammonia, above everything but alcohol. These are but slight observations on a subject opened with a breadth and discussed with a richness for which we cannot sufficiently express our admiration.

DR. CARL SEILER: I have only to say that in my experience the addition of chlorate of potassium to the chloride of iron has been of great use, although I agree with Dr. Jacobi that chlorate of potash alone is of little use. From laboratory experiments I attribute this to the disengagement of chlorine gas when the two solutions are mixed.

I see that Dr. O'Dwyer has added an artificial epiglottis to the tube. It has been the experience of all laryngologists to meet with cases of complete or almost complete destruction of the epiglottis by syphilitic or other ulceration, in which there has been no difficulty of deglutition at all. Therefore I long ago came to the conclusion that it is not the epiglottis which protects the larynx, but the apposition of the ventricular bands. And I would suggest, though I have no experience with such a device, that if the tubes were so made that the head could slip into the ventricles of Morgagni without interfering with the ventricular bands, there would be no difficulty in deglutition experienced. It is not only in New York, but also in this city, that the only operation for opening up the air passages that parents will consent to, is intubation. I recall a very distressing case in an asylum, in which the matron would not consent to tracheotomy until the mother of the child had been communicated with, and while they were hunting the mother the child choked to death. This was before we knew of intubation. That we might have performed at once.

DR. H. R. WHARTON: The hour being so late I must postpone what I had intended to say concerning some of the complications of intubation. As to the calibre of the tubes, the fact that children do breathe well with tubes as now made, is sufficient evidence of the correctness of Dr. O'Dwyer's position. Since my experience of this, I am not so anxious as formerly to get in the largest tracheotomy tubes.

DR. E. E. MONTGOMERY: Since August, 1886, I have performed some thirty or forty intubations, having previously done some twenty-eight tracheotomies. Fifty per cent. of the children intubated have recovered. My experience is that this operation largely reduces the necessity for tracheotomy, and I believe that if intubation were done early in every case, tracheotomy would rarely be necessary. I cannot refrain from saying that I feel that in devising and perfecting his operation, Dr. O'Dwyer has been a benefactor to the medical profession and to the human race.

DR. M. PRICE: In the evolution of steam from lime I have for the last fifteen years depended upon the same method as country people use in the scalding of hogs. Put a few pieces of lime in a bucket with hot water, place a blanket over the bed and let steam pass over the child's head. Soon the child acquires confidence and asks for relief, and will even bend his head down over the

bucket trying to get the vapor into his throat. Now, if every half hour a hot stone or brick or piece of metal be added to the water, it will keep up the heat without any stove or fire being needed in the room. It keeps the room clean and the atmosphere sweet. I have not found so much danger of contagion when lime is used.

I show here a specimen of tincture of chloride of iron in syrup, which is well made and of the proper color. There are very few drug stores in which you can get it properly made, and if you don't get the right thing it is of no service whatever. Its greatest good is in its local effect.

DR. SHIMWELL: I have performed intubation sixteen times with seven recoveries. In all there has been immediate relief to respiration. In one case I had to remove the tube twice, and introduce it three times, and perform artificial respiration. In removing the tube post-mortem, I have found it impossible to drag it down through the trachea, so there is no danger of slipping. Is not the occurrence of substernal respiration-depression rather too late an indication to wait for?

The President, DR. J. SOLIS-COHEN: I have listened with pleasure and with profit to both these papers; and with all the study that I have given to this subject, I have gained information to-night on many points. The advice to give early attention to the heart, that when danger already threatens it may be too late to effect anything with remedies, is advice that we should all take to heart. We have been distinctly taught that the prevention of this complication must be from the beginning an integral part of the treatment.

In regard to local treatment my experience has differed from that of our distinguished guest. Where it can be properly applied to the extreme margins of the pseudo-membrane I have found that the topical use of chloride of iron, by firm and gentle pressure with brush, or, preferably, cotton wad, the most serviceable agent I have used. The drug has an astringent and a disinfectant action, and I am satisfied that I have time and again seen it assist the detachment of false membrane, and apparently prevent the extension of the infection. Concerning the value of chloride of iron internally, the importance of large and frequent doses, the advantage of mixture with glycerine to assist its local effect, I can only confirm what has been said. So, too, as to the bichloride of mercury; I am glad to hear its great usefulness emphasized, and, with Dr. Pepper, I would include all forms of the disease in the field of that usefulness. Empirical observation has long

taught us the preëminent value of the chlorine compounds in general in the treatment of diphtheria; and the mercury chlorides, more particularly calomel, however, have always enjoyed a high reputation in the internal treatment of membranous laryngitis. It has pleased me, in these discussions, to hear reasons at least plausibly advanced in explanation of facts which our forefathers learned and used empirically; this is the true direction of medical progress. The topical action of steam is very important. It has always seemed to me that in the natural course of the disease the membrane is thrown off by an accumulation of fluid beneath it which softens it and secures its detachment. We aim, then, by furnishing artificial moisture, to imitate the natural process of recovery. And this leads me to speak of the value of the vapors from lime in the process of slaking. Using a large wash-tub or wash-boiler, and keeping up a supply of large pieces of lime, we secure an abundant disengagement of the hot vapor of water, carrying up with it particles of lime, which mechanically assist by prying up the edges of the pseudo-membrane, and thus favoring the access of the vapor of water beneath it.

There is another method of local treatment which I employed with great satisfaction, more especially in former years, when I saw more of the disease—that is, inhalation of carbolic acid in the spray of a steam atomizer, in very large doses. Twenty to twenty-five grains would be added to the ounce of water, and from half an ounce to an ounce sprayed into the throat every hour, or even half hour, until commencing discoloration of the urine gave evidence of saturation, when the remedy was to be stopped until the urine again became clear. Under this method I would advise the attending physician to see the child four or five times a day, always having the urine last voided saved for him, and when the olive discoloration is noticed to intermit the carbolic acid. This seemed to me to disinfect the system, and thereby improve the local condition, and, at the same time, to prevent or diminish the danger of systemic sepsis. I was not aware, before to-night, that such small doses of carbolic acid as Dr. Jacobi mentions, could be of service.

I must repeat our sincere appreciation of the obligation under which Dr. Jacobi has laid us by his masterly paper. I am also glad to thank Dr. O'Dwyer for his lucid exposition founded on fact, and proved by actual exhibition of specimens, that the small calibre of his intubation tube is amply sufficient for due respiration. My own experience

with tracheotomy has led me to favor large tubes, the largest that can be introduced without touching the walls of the trachea. I still believe that I have seen life saved by taking out small tubes and substituting larger ones. And I confess that the small calibre of the tube used was one of the theoretical considerations which I enumerated among the drawbacks to intubation. But facts are stronger than theories, and as the small calibre intubation tube does seem to give air enough, and as enough is all that is wanted, I am ready to profess my satisfaction with its present calibre.

I must ask Dr. O'Dwyer to make clear to us the question as to the impaction of membrane. This is not a mere theoretical objection, but is borne out by experience. Perhaps I have been led to attach an undue importance to the matter by an accident which occurred to me a year or so before Dr. O'Dwyer read his now historical paper before the International Medical Congress at London, in 1881. I had been called to a case of membranous laryngitis, and had proposed tracheotomy, which had been declined. As I turned to leave the room the mother called piteously, "Oh, doctor, don't leave my child without trying to do something for it." I said to my assistant, "we will try to save this child," and taking a catheter I cut off the end, and passed the instrument into the larynx. The child instantly became black in the face, and there was nothing for it but, without asking any questions, to plunge my knife into the trachea as the child lay on its mother's lap. I inserted the same catheter through the orifice deep into the trachea, and then we performed artificial respiration; my assistant inflating the child's lungs through the tube with his own breath, and my hands exercising compression of the thorax in respiratory rhythm; and, after a while, we had the satisfaction of leaving the rescued child sleeping peacefully with unobstructed respiration. But I confess that this experience cost me some of the most anxious moments of my life, and has left a fear of the danger of crowding down membrane in front of a tube introduced into the larynx, which may, perhaps, make me overanxious.

DR. JACOBI, in closing the discussion on his paper, said: The slaking of lime has the further advantage that it is the only way to utilize lime. A lime-water spray is useless, but in slaking, a large amount is carried up into the air and air-passages.

The suggestion of the President, that carbolic acid should be used in spray until discoloration of the urine is noticed, I do not

feel inclined to adopt. Diphtheria is the very disease in which no complication should be allowed to exist, and we must not tempt them. A single case in which we should have to blame ourselves for a possible nephritis would, in my judgment, condemn the treatment. Besides, young infants are sometimes poisoned by very small quantities.

DR. O'DWYER, in closing the discussion on his paper, said: Pushing down of membranes does occur, though rarely. The difference between the liability to the accident in catheterization and intubation, is that the catheter has an open, comparatively broad end, while the intubation tubes are comparatively probe-pointed. One pushes and catches the membrane, the other slides past it. I have crowded membrane down in only two cases out of two hundred sufficiently to produce asphyxia. In those two, on removal of the tube, the cast was coughed out.

If we take away the tube because the child is breathing badly and the trachea is full of membrane, the child not having the strength to cough it out, the child chokes from the absence of the tube, not from its previous presence. My attention is now being directed to devising a means to get rid of the membrane. I hope to present something practical before long.

Blocking with membrane while the tube is in may occur. Formerly, when the swell of the tube was not so great, it would be coughed out, but now it is not coughed out, and suffocation may take place. The original tube was better in this regard. The earlier tubes were made to fit into the ventricles with the idea of permitting the approximation of the ventricular bands, but it did not work. It is true that the epiglottis is merely an accessory, but in an intubation case the ventricular bands being held open we have to depend upon it; and that is the reason, the dependence being a poor one, that solids and semi-solids which can go down in mass are better than liquids.

MEDICAL SOCIETY OF NEW JERSEY.

ONE HUNDRED AND TWENTY-SECOND ANNUAL
MEETING, SCHOOLEY'S MOUNTAIN, N. J.,
JUNE 12 AND 13, 1888.

First Day, Tuesday, June 12.

At four o'clock, P. M., on Tuesday, June 12, the Society convened in the large parlor of the Heath House, Schooley's Mountain.

The meeting was opened by prayer, by the Rev. Hugh Smythe.

The calling of the roll showed about one hundred delegates present, and the number in attendance was increased by the presence of many visitors. Among those who were formally received by the Society as its guests were: Dr. Adam C. Deane, of Massachusetts; Drs. Bulkeley, G. Grant, Gibney, Tanner, and Morrow, of New York; and Drs. Packard, Seiler and De Forest Willard, of Philadelphia.

The afternoon session was devoted to routine business, the appointment and the reports of committees. The Society was welcomed to the mountains by Dr. J. G. Ryerson, who spoke of the value of the mountains as dispensers of pure air and good health to all comers, and pointed expectantly to the time when the villas on the mountains would be as the sands, or the cottages on the sand, of the sea. He spoke of the appropriateness of this visit of the oldest of the State Societies to this, the oldest of the health resorts.

After a short adjournment for dinner, the Society convened at 8 P.M.

DR. JOHN W. WARD, of Trenton, delivered the President's address. His subject was the

Responsibility of the Insane.

He urged the importance of the medical factor in determining the accountability of those pleading insanity as an excuse for crime. The term "mental disease" is unfortunate; insanity is not a disease of the mind, but a disease of the brain—a physical disease. In marked cases it does not need an expert to tell that the mind is deranged; but there are cases in which the disease is so subtle as hardly to be recognized by the victim's intimates until some untoward act is perpetrated. In these cases medical opinion alone is of value in determining responsibility.

Between that psychological condition which elects to do evil instead of good, and which does this the more readily because of heredity, education and surroundings, and mental derangement due to diseased brain, there is a line to be drawn, and upon this line rests the question of responsibility. Neither the popular idea that insanity transforms the individual, nor the legal idea that insanity is some mysterious abstraction that renders the individual powerless to reason, is correct.

He then gave a historical review of the many theories regarding insanity, and their effect upon criminal laws and judicial decisions. Coming down to modern times and quoting Chief Justice Hornblower's ruling in the Spencer case, "that the burden of proof of insanity is on the accused, and what-

ever the amount of insanity present, if he is conscious at the time of committing an atrocious act, he is guilty in the eyes of the law," Dr. Ward said: such rulings are not right. Insanity is not a question of metaphysics or of morals, it is a question of disease. The insane act from well-defined motives, and are influenced by passions and by revenge, in the same manner as the sane are. A delusion or hallucination is a reality to him who is thus affected. The pivotal point on which responsibility should rest is the dependence of the criminal act upon the insanity of the individual.

Insanity in these cases consists, not in preferring vice to virtue, in applauding crime and deriding justice, but in being unable to discern the essential identity of nature between a particular crime and all other crimes, whereby they are led to approve what in general terms they have already condemned. Dr. Ward advocated the establishment of a Board of Experts to advise with a court in all such cases, who should examine the case as medical men and officers of the court to determine insanity and responsibility.

The Standing Committee submitted a report founded upon the reports of the various district societies. It was exceedingly long, and portrayed the health of the State down to very minute details. It indicated that malarial diseases have steadily decreased all over the State, and that the physicians of the State have about the usual amount of contagious and seasonal diseases to combat.

DRS. BALDWIN, RODGERS, and QUIMBY, discussed the question of the

Relation of Laundry and Dish-Water to the Spread of Disease.

Nothing particular was developed by this discussion.

DR. LEHLBACH opened the second subject for discussion,

What Treatment will Most Effectually and Promptly Curtail the Course of Acute Rheumatism?

with a paper which he summed up as follows:

First. It should be treated as early as possible, and the public should be educated to understand that we do know something about it.

Second. Rest at the incipiency of the disease is essential to the rapid curtailment of its course.

Third. Individualization in every case should be carefully observed, and each case

should be treated by itself, and routine avoided.

Fourth. Being a disease probably due to specific causes, probably microbic, it should be treated by such remedies mentioned as experience, both empirical and scientific, shows to be efficient.

The session adjourned at 10.30 P.M., to partake of a banquet served by the proprietors of the Heath House.

Second Day, Wednesday, June 13.

The third subject for discussion,

The Treatment of Phthisis by Gaseous Enemata,

was opened by DR. STICKLER, who gave an interesting *résumé* of cases which strengthen the general opinion of the profession, that the gaseous method is not a success.

The various reports of delegates to corresponding societies were then received, and addresses were made by delegates from other State Societies and by visitors from other places.

DR. JAMES S. GREEN, the third Vice-President, read a paper entitled

A Review of the Surgery of the Knee-joint for the Last Fifty Years.

This was a finished and thorough study of the surgery of the knee-joint; the various phases and methods of the different periods of surgical science, and especially the modern methods, were carefully described, and their respective merits discussed and compared.

DR. PACKARD, of Philadelphia, discussed the paper, giving his views of the technique of the operation by incision, the value of backward drainage through the popliteal space, and the operation of erosion for gelatinous degeneration of the joint. He also spoke of the difference between the conditions, when foreign bodies are introduced into a joint and when it contains loose cartilages and pus.

DR. WATSON was invited to describe to the Society the experiments of Dr. N. Senn, made before the Surgical Section of the American Medical Association on the diagnosis of intestinal wounds by the hydrogen gas tests.

DR. PACKARD, of Philadelphia, requested the attention of the Society to the question of the establishment of State Boards of Examiners in Pennsylvania and New Jersey. He considered that serving on such mixed boards was in violation of the Code of Ethics. He quoted that part of the code which referred to this part, and claimed that serving on such

a board was acknowledging regular medicine to be a sect, and that granting them licenses to practice was recognizing homeopaths and eclectics as true physicians and recommending them to the public as trustworthy practitioners. Homeopathy to-day is just as much a system of quackery as ever it was. They take advantage of all advances made in scientific medicine, but have added and do now add nothing to it. They practice under a flag whose principles they do not adhere to. It is much better to wait action until it can be taken without opposing the code, which is the one bond of the medical profession.

DR. PENNINGTON said that the views of Dr. Packard were in harmony with those of a committee appointed a few years ago on a cognate subject, and were those to which he could willingly subscribe.

DR. LEHLBACH, after a lively speech of a few minutes, wherein he divided the adherents of homeopathy into two classes, those who know better, and those who don't, preferring the latter, presented the following resolutions, which were carried:

"Resolved, That the following questions should be submitted to the District Medical Societies for consideration during the coming year:

First, Is it in the interest of the protection of the public against illegal and unqualified practitioners that State Boards of Examiners should be established?

Second, What would be the proper and best way of establishing such Boards?"

The third resolution directed that the action of the County Societies should be reported to the State Society at its next meeting.

The Nominating Committee presented the following nominations for officers for the ensuing year, who were immediately elected: *President*, H. Genet Taylor, Camden; *1st Vice-President*, B. A. Watson, Jersey City; *2d Vice-President*, James S. Green, Elizabeth; *3d Vice-President*, E. J. Marsh, Paterson; *Corresponding Secretary*, William Elmer, Jr., Trenton; *Recording Secretary*, William Pierson, Orange; *Treasurer*, W. W. L. Phillips, Trenton; *Standing Committee*, T. J. Smith, Bridgeton; D. C. English, New Brunswick; J. G. Ryerson, Boonton. Next place of meeting, Spring Lake. The date to be announced.

DR. BARKER exploded a small bomb-shell in the convention by introducing a set of resolutions regarding the Morris Plains Asylum. There was much discussion immediately, and, after the sense of the meeting had been pretty well developed, resolutions were passed as follows:

Whereas, The Morris Plains Asylum for the Insane has for the last three years been managed upon what is generally termed the "dual system;" and,

Whereas, That experiment has drifted into a state of things that has resulted in a legislative investigation of alleged mismanagement; and,

Whereas, The proper treatment of insane persons can be fully carried out only when the medical staff has entire control over everything that pertains to the bodies as well as to the minds of the unfortunates committed to their care: therefore be it

Resolved, That the Medical Society of New Jersey hereby expresses its unqualified disapproval of any system of management that takes the food, the clothing, or any other physical want of the patients from the care and control of the medical staff, where it properly belongs, and places it in any other hands.

DR. H. M. WEEKS was appointed essayist for the next annual meeting.

DR. DAVIS reported from the special committee having the matter in charge, a proposed law for the regulation of dissections.

After the usual vote of thanks the meeting adjourned.

PERISCOPE.

Exudative Peritonitis of Children.

In the *Archiv für Kinderheilkunde*, IX, 2, Dr. Max Hirschberg communicates eight cases of undoubtedly chronic tuberculous peritonitis, and four cases of a non-tuberculous nature, from Baginsky's polyclinic. The clinical differential diagnosis between the two forms is extremely difficult, frequently about impossible. In favor of the tuberculous form are: tuberculous disease in the lungs, testicle, bones, lymph-glands; associated with marked, steadily progressive emaciation, hereditary taint, redness about the navel, with eventually formation of abscess and the detection of tumors by palpation.

Treatment consists in the maintainence of the strength of the patient, and if possible improving it by the use of strengthening food, iron, cod-liver oil, extract of malt, etc. Then the absorption of the exudate is to be started by diuresis and diaphoresis, cold water or cold wrappings. Inunctions with mercurial and iodoform ointment are to be tried. We are powerless against the tuberculous process proper. The author thinks König's proposal of laparotomy with antiseptic washing of the peritoneum is worthy of

further trials. Early paracentesis, as proposed by Fiedler, he thinks can for the most part be dispensed with, as the end can be achieved without it.—*Deutsche Medizinal-Zeitung*, March 15, 1888.

Removal of Kidney for Pyonephrosis.

At the meeting of the Imperial Royal Medical Society of Vienna, March 9, 1888, Dr. Weinlechner presented a patient from whom he had removed the right kidney on account of pyonephrosis. She was fifty-one years old, and had suffered for ten years with pain in the right side of the abdomen, and soon after the occurrence of the pain she noticed a tumor, which continued to extend downwards, and was of changing size. In periods lasting three weeks there were fever and violent pains in the tumor; during this time the urine was clear and the tumor became larger; at the end of the three weeks the urine became purulent, the tumor became smaller, and the patient felt better. These periods during the first five years were infrequent, but became constantly more frequent, so that the patient was never free from pain. When Dr. Weinlechner saw her he found in the lumbar region a tumor extending four finger's breadth from the symphysis; fluctuation was marked, and the lower border of the tumor was easily movable. The diagnosis of pyonephrosis was made, and nephrectomy by the extraperitoneal method done October 18, 1887. About one pint of pus was first removed, and then the tumor itself. Recovery was prompt. The urine rose in amount from 20 to 30 ounces, and reached, on the twentieth day after the operation, 45 ounces.—*Deutsche med. Wochenschrift*, April 5, 1888.

Dicrotism of the Pulse in Insufficiency of the Aortic Valves.

Geigel (*Deutsches Archiv*, Bd. 42, Heft 4, 391) reports an interesting case which shows that the presence of dicrotism in a compound valvular lesion is no proof that the aortic valves are not affected. The patient when first examined exhibited typical signs of pure aortic insufficiency, and her sphygmographic pulse-tracing was that characteristic of this affection. Later, a fresh endocarditis developed, and then signs of mitral regurgitation. A new tracing now revealed the presence of distinct dicrotism. The author explains this in the following manner: In simple aortic insufficiency the contraction of the arteries drives the blood back into the empty, dilated, and yielding left ventricle, and there is consequently no secondary pulse-wave, or, at most, only a suggestion of one. If now the

mitral valve becomes insufficient, the left ventricle drives a considerable portion of its blood during the systole into the auricle. The greatly distended and over-filled auricle then returns this at the very beginning of the diastole into the ventricle, and the ventricle, now on its part fully distended, offers a resistance to the mass of blood tending to regurgitate from the aorta. The secondary pulse-wave is, therefore, again produced, just as though the aortic valves were sound. It was interesting to note in the case reported that the endocarditis appeared later to heal, while the systolic murmur and the accentuated pulmonary second sound disappeared. A pulse-tracing taken at this time showed the absence of dicrotism as when first examined.—*American Journal of the Medical Sciences*, May, 1888.

Inversion of Abdominal and Thoracic Viscera.

At the meeting of the Edinburgh Medico-Chirurgical Society, April 4, 1888, Prof. T. R. Fraser exhibited a case of inversion of the abdominal and thoracic viscera. The patient was a woman, 23 years old, who came under observation suffering from the effects of over lactation. She had nursed her child for thirteen months, and was weak and debilitated. Palpitation coming on, she noticed that there was a "beating" on the right side. For this she consulted Dr. Johnston, of Leith, who on discovering the peculiar nature of the case, sent her to see Dr. Fraser. Percussion and auscultation proved the case to be one of transversion of the heart, the position of which could not be accounted for by any previous illness. On further examination it was found that the stomach and spleen were also on the right side, while the liver was on the left—a complete inversion of these organs. The patient is one of a large family, six of whom have been examined, and in all the position of the viscera is normal. It is also normal in the case of her father, mother, and the child, showing absence of heredity.—*Medical Press and Circular*, April 18, 1888.

Asserted Antagonism of Certain Poisons.

At the meeting of the Biological Society of Paris, May 12, 1888, M. Roger said that he had made some experiments in the laboratory of Bouchard for the purpose of determining if, as asserted, the lethal dose of a poison is modified by the simultaneous introduction of another poison. He selected for experiment morphine, atropine, quinine

and chlorate of potassium. He, in the first place, determined the toxicity of the drugs when they were injected into the veins; the numbers so obtained represent what Bouchard has called the toxic equivalents. He then mixed two of these bodies and investigated their united toxicity. "I have proved," said M. Roger, "that with mixtures of atropine and morphine, the animal dies even before having received the toxic equivalent of one of the two bodies; this is also true of mixtures of atropine and quinine, and of quinine and morphine." In all these cases, he says, the two substances re-enforce each other in their action and their toxic powers were duly increased. He says he has proved that mixtures of chlorate of potassium and of quinine have a toxic power nearly twice that indicated by the sum of the toxic powers of the components. When the potash salt is added to morphine, each substance acts as though it were alone, and the animal dies when it has received the lethal dose of one of the two poisons. In no case has he observed a toxic antagonism, that is to say, a more or less complete neutralization of one poison with another.—*Bulletin Medical*, May 16, 1888.

Gouty Peripheral Neuritis.

In an interesting account of a case of peripheral gouty neuritis, in the *Bristol Medico-Chirurgical Journal*, March, 1888, Mr. F. W. Jolly gives the following symptoms as being in favor of his diagnosis of peripheral neuritis:

1. The pain remained limited to one side for some time before suddenly appearing on the other.
2. The lightning-like pains in the extremities, and the "pins and needles" in the fingers and toes.
3. The marked tenderness of several nerve-trunks.
4. The hyperesthesia and wasting of the muscles of the extremities, accompanied by the R. D.
5. The vasomotor disturbances.
6. The paralysis beginning in extensors and spreading towards the trunk, and afterwards affecting to a slighter extent the hands and arms.
7. The decided intermissions of pain which the patient frequently enjoyed during the earlier stages of the disease.
8. The relief from pain during the attack of gout.
9. The retention of urine coming on as a very late symptom.
10. No affection of the mental faculties.
11. Absence of bedsores.

Remarkable Case of Aneurism of the Thoracic Aorta.

Dr. Byrom Bramwell, who reports this case in the *Edinburgh Medical Journal*,

April, 1888, says that the case is remarkable from the fact that the patient was able to follow his employment for at least seven years with an aneurism projecting through the front wall of the thorax. The notes show that the patient was a foreman, 48 years old, who in February, 1887, was found to have a pulsating tumor, fully the size of half a cocoanut, projecting from the front of the left chest, between the clavicle and the fourth rib. The clavicle was pushed slightly forwards and upwards by the base of the tumor. The skin over the tumor was thin, and already beginning to present the blue, glazed, shining appearance so suggestive of approaching rupture. There was very forcible pulsation all over the projecting part of the thorax, and the contents of the sac appeared to be fluid. In addition to the dulness in front, there was well-marked impairment of the percussion note in the left supra-scapular and infra-scapular and in the inter-scapular regions.

A systolic murmur was audible over the tumor, at the base of the heart, and over the left side of the back; the aortic second sound was accentuated. The heart seemed enlarged as well as displaced downwards. The left pulse felt delayed when compared with the right.

The patient gave the following history of his case: Some fifteen years ago, while making a powerful effort in helping to lift and remove a boiler, he distinctly felt something give way in his chest, and fainted. After this strain he suffered more or less from severe pain in the left shoulder, left arm, and upper part of the left chest. These pains were thought to be rheumatic. One winter's day (according to his wife, seven years previous to his death, but as Dr. Bramwell has it in his notes, eight years ago) he fell while clearing snow of the roof of his house, and struck his chest with great force against the projecting knob of an iron railing. He became very faint, and turned of a dirty green color. After this, a lump gradually formed at the upper part of the left chest—the seat of the injury. He consulted the late Dr. Houston, who diagnosed the condition as aneurism of the thoracic aorta, and sent him to the Edinburgh Royal Infirmary, where he remained for several weeks. In the Infirmary the diagnosis of an aneurism of the thoracic aorta projecting through the front of the thorax was confirmed, and the iodide of potassium was administered in full doses. Under this treatment and rest, the pains in the chest and shoulder were much relieved, but the pulsating tumor, which was, he says, at that

time about the size of a hen's egg, did not diminish in size. After his discharge from the Infirmary he returned home, and, contrary to the advice of the doctors, went back to work. He continued to follow his employment regularly until January of the present year, occasionally feeling pains in the shoulder and back, but seldom having been off work even for a single day. During the whole of this time the pulsating prominence remained in a stationary condition as regards size, his general health was very good, and he looked so well that he does not think that any one suspected that there was anything the matter with him. His hours of work were from 6 A.M. to 6 P.M. During the greater part of that period (twelve hours) he was on his feet, standing or walking about superintending the work in the manufactory; he used to go many times a day from the top to the bottom of the building, generally using the hoists, but not unfrequently (certainly several times a day on the average) walking from the bottom to the top of the stairs.

During the whole of period (seven years) he had no special treatment. Throughout life he has been a remarkably steady, regular-living man; he has never had rheumatism nor syphilis, and unless it were the accidents previously described he knew of no possible cause of the condition.

Some three months before this report was made, the pains in the chest, shoulder, and back became much worse, and the tumor at the same time increased in size.

Electrolysis was suggested, but he decided against the operation. It was therefore agreed to continue the iodide in full doses, to relieve the pain by subcutaneous injections of morphia, to keep the patient at absolute rest on his back in bed, and to apply a plaster as a support over the tumor externally.

The subsequent progress of the case was, as had been expected, short; the tumor continued to increase in size, and finally ruptured on March 12.

—At the Pennsylvania Hospital for the Insane in West Philadelphia, a cottage was formally opened June 16. This cottage is a step on the part of the hospital managers to establish a system of cottage treatment which will furnish patients who can afford it with more home-like surroundings, and group them into families. The cottage is attractive in its architecture and comfortable in its furnishing. It will accommodate about sixteen persons.

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CHARLES W. DULLES, M. D., EDITOR.

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TREATMENT OF CANCER OF THE LARYNX.

The recent death of the Emperor of Germany will attract attention anew to the important subject of the treatment of cancer of the larynx, which has been so much discussed during the year just past. The great question is: Shall cancer of the larynx be treated by a surgical operation or not? and, if by surgical operation, what one offers the best chance of success?

In studying this subject no one can overlook the fact that each case is likely to present peculiarities which must influence a decision, and prevent this from following strictly the general rules which can be deduced from a study of statistics. Still, these general rules are of great value; and they are, in fact, indispensable to a wise determination in any particular case.

It is with great interest, therefore, that we examine a careful paper on the treatment of cancer of the larynx published by DR. MAX SCHREIER, of Berlin, in the *Deutsche med. Wochenschrift*, June 7, 1888. In this paper Schreier gives the result of an analysis of the features presented by one hundred and twenty-five cases subjected to various methods of treatment. He found in the whole number only four which were treated without operation. Of these patients one lived but two months, one twelve months, one fourteen months and one two years after

coming under medical observation. In seventeen cases tracheotomy was performed. Of these patients, seven died within eight days and the rest within nine months. In nine cases laryngotomy was performed and the growth removed through the incision. Of these patients, three died within fourteen days; in three there was recurrence of the morbid growth within about a year. Three patients are said to have been cured; but in the case of only one can this result be properly claimed. Partial extirpation of the larynx was performed in thirty-three cases. Of these patients five died within six weeks. In four cases recurrence took place within three months and in one after sixteen months. Four patients remained free from recurrence for periods varying from one to three months, two from three to six months, one for seven months, and one for fourteen months. These are hardly to be reckoned as cures, as the time of observation is too short. But five of the patients operated on in this way had no recurrence for periods varying from nineteen months to seven years, and may be regarded as having been cured.

Total extirpation of the larynx was performed in sixty-eight cases—a little over half of all. Eighteen of these patients died within two weeks, and five within six weeks. Recurrence took place in seventeen cases—in twelve within six months, in three within nine months, and in two at a later period. Six of the patients died of intercurrent disease, and twenty-two are said to have been cured. However, thirteen must be deducted from this number, as having been too short a time under observation, leaving only nine who remained free from cancer for periods varying from sixteen months to three years and a half.

Removal of the morbid growth through the mouth was attempted in four of the cases studied by Schreier, and only one of the patients can be fairly regarded as having been cured.

These results seem to indicate that the choice in the treatment of cancer of the larynx lies between letting the growth alone and performing partial extirpation of the

larynx. Tracheotomy, laryngotomy and total extirpation of the larynx seem to be much more dangerous to the life of the patient and the latter two to offer less hope of preventing recurrence, while the former, of course, is at best only a palliative operation; while attempts at removal through the natural passages do not offer much hope of a cure. As between a purely expectant method and partial removal of the larynx, the choice is not clearly pointed out by a study of statistics, and it must be determined by the condition of the patient, and the character and extent of the morbid growth.

These conclusions are, we believe, of great value; although, as we have said above, they must be regarded not as establishing fixed rules, exactly applicable to all cases, but rather as indicating general principles which ought to be taken into careful consideration by all surgeons. Experience in the treatment of cancer of the larynx may justify the choice in any case of a method which seems less favorable than some other, regarded in the light of statistics alone; but we believe it will be wise for most of our readers to follow the indications we have pointed out, and to choose between leaving the case to Nature or giving the patient the chance of relief or cure offered by a partial extirpation of the larynx.

INDICATIONS FOR VAGINAL AND INTRAUTERINE IRRIGATION AFTER LABOR.

It has been but a short time since it was customary in lying-in hospitals to use the vaginal, and even the intra-uterine douche, as a routine practice during the puerperium, as a prophylactic against septicæmia. This measure was almost universally commended by authorities, and its introduction even into private practice urged by many. The method was based upon the indefinite ideas concerning the nature of puerperal infection then prevalent. And in England, where great stress is laid upon the exanthemata as frequent causes of puerperal mischief, and the atmosphere is regarded as a common medium of contagion, and auto-infection is considered a fact, this practice is still recommended. With the growth and more gene-

ral acceptance of the germ theory of puerperal sepsis, the methods of infection have been more closely studied, and it is now the accepted belief that when infection occurs it is almost always during labor, or immediately after, and that the poison is conveyed upon the fingers, instruments or utensils brought in contact with the genitalia—the atmosphere serving as a medium of contagion only under rare and exceptional conditions. Also, that the genital passages of the healthy parturient, at the beginning of labor, are not septic. Thus attention has been directed toward disinfecting everything coming in contact with the parturient canal, instead of waiting until the poison has gained entrance, and then using germicidal solutions, by irrigation, to destroy it. Garrigues, whose teaching and results have largely influenced hospital practice in this country, uses a single vaginal douche after normal labor. Where efficient antiseptic precautions have been employed during labor, this cannot be regarded as a measure of disinfection, but rather as one of extra precaution, defensible in hospitals, on the ground of the almost ever present danger of infection, and that when given by the physician himself it can be used with safety. It can also be defended by the practical argument that the results of the method have been most excellent. This is a very different matter from the routine use of vaginal injection, during the puerperium, by the nurse. There are good reasons for the belief that infection has not infrequently occurred from the introduction of decaying organic matter on imperfectly cleansed syringe nozzles, where this method has been employed. In private practice, when a normal labor has been properly conducted, neither a vaginal nor intrauterine douche is indicated.

By irrigation we may expect to accomplish two things: remove foreign matter, and disinfect the utero-vaginal canal. Hence irrigation is indicated whenever material liable to undergo putrefaction, such as particles of secundines, clots, or detritus from a macerated foetus, is present or retained; and when infection is known to have occurred, or there

is reasonable ground to suspect it. It is a well-known clinical fact that tedious labor, and manual or instrumental delivery, favor puerperal sepsis. This is largely explained by the present views on the methods of infection. After such labors a single antiseptic irrigation is called for, since there is then reasonable ground for fearing infection. Where manipulations have been made within the cavity of the uterus, it, as well as the vagina, should be douched. So, also, where labor is complicated by a putrescent foetus, or other matter, or by gonorrhœal vaginitis, irrigations should be used and continued.

Irrigation finds its best indication in the disinfection and removal of septic material from vagina and uterus. When a diagnosis of puerperal septicaemia is made, the douche should at once be used. Since infection takes place, in the majority of cases, through lesions of the vagina or vulva, only vaginal irrigation should be employed, unless the symptoms be urgent, or a relaxed uterus painful on pressure, points out the site of absorption. This irrigation is to be repeated at intervals of three or four hours. If the symptoms do not subside within six or eight hours, or if they grow worse, the uterus also should be washed out. Opportunity is afforded to examine the entire tract during the manipulations. After thoroughly douching the vagina, the aseptic finger should explore the vagina and cervix, and, assisted by the other hand manipulating through the hypogastrium, the uterine cavity, as far as possible. A putrid os, retained clots or fragments of secundines, a necrotic odor clinging to the examining finger, and tenderness or swelling of the uterine tissues are the most characteristic signs of involvement of the uterus. It should not be forgotten that a foul odor is by no means necessarily present in puerperal septicaemia, but that, on the contrary, it is frequently entirely absent. When such an odor is present it is usually due to putrefaction of the contents of the vagina or uterus, which, with an intact mucous membrane, may be present without septic absorption or fever. When attached fragments of placenta are present,

especially if large, the use of the douche should follow the removal of the mass by the finger or curette. Shortly after intra-uterine irrigation, and especially after emptying the uterus of decomposing material, a chill with rise of temperature not uncommonly occurs. This is usually of short duration, and in general the temperature and symptoms are markedly influenced for the better. Especially may this happy result be expected in cases of putrid infection, where the fever is due rather to the absorption of the products of decomposition, than to the action of the virus on the tissues proper. The intra-uterine douche, where it is necessary to repeat it, should seldom be used oftener than once or twice daily. The vagina, however, may be irrigated at intervals of three or four hours. Iodoform, when used within the uterus, will diminish the necessity for the frequent use of the douche. Obviously injections give the best results when resorted to early. In cases of putrid absorption the reservoir of supply is removed, and in those in which the tissues are primarily invaded, the supply of the contagium is limited. When once the germs are within the tissues, they are beyond the influence of irrigation. In the unfortunate, progressive cases, in which tissue invasion has been great, the effect of local treatment is slight, and it is sometimes actually harmful, instead of beneficial. There is a growing opinion that the douche is useless under these circumstances. Mundé, especially, records himself as opposed to its routine continuance. Wherever there is putrid material to be removed, or a fetid discharge to be overcome, injections are indicated. But when these ends have been met, if the patient does not improve, and especially if shock is produced, after a fair trial the douche should be abandoned, or only an occasional vaginal injection be given.

The instruments necessary for the vaginal douche are, preferably, a fountain syringe and a bed-pan. The patient should not be disturbed during its administration. The two precautions necessary for safety are, to have the syringe free from air, and to secure

a free outflow for the solution. For irrigating the uterus the modified Bozeman canula is perhaps the safest and best instrument, being attached to a fountain syringe. Unless an examination is to be made, and except where difficulty is met in introducing the canula, the woman should not be disturbed. After douching the vagina, one or two fingers are introduced into the cervix, and the instrument gently inserted. Where no special instrument is at hand, the common semi-flexible catheter, with some additional holes for the exit of the fluid, answers the purpose admirably. Here the return flow must be especially watched. The solution should be allowed to flow until it returns clear and odorless. From one to three pints is required. After the tube is removed from the uterus any flaky matter is washed from the vagina. Here also safety depends on the exclusion of air from the irrigator, and the total discharge of the solution. The uterus is emptied by securing contraction with frictions and compression, assisted by the use of ergot, the vagina by retracting the perineum. Where difficulties are encountered, or an examination is to be made, the patient should be placed cross-wise on the bed, in the ordinary lithotomy position. Gentleness is highly important. Vaginal irrigation may be entrusted to the nurse; but the uterus should be washed out by the physician only.

For general use a solution of corrosive sublimate—one part to two or four thousand—is preferred, as being a safe and yet an efficient germicide. Where kidney disease or marked anæmia is present, a weaker solution—one to ten thousand—may be used, or the usual solutions may be followed by the weaker, by carbolic acid solution, or by plain boiled water. Carbolic solution, in a strength of from two and a half to three per cent., is efficient, but has the disadvantage of its odor. The solutions should be used at a temperature of 110° F. to 115° F. Cases of sublimate poisoning are reported; but where ordinary precautions are used to secure the thorough evacuation of all fluid from the uterus and vagina, they are certainly not to be expected.

HIGHER MEDICAL EDUCATION.

In the *REPORTER*, June 2, 1888, we called attention to the steps which we believe to be most urgently needed for the improvement of the standard of medical education in this country. It is with satisfaction that we call attention now to the fact that, at the last meeting of the Medical Society of the State of Pennsylvania, a discussion which took place disclosed the fact that a very large majority of the members of the Society hold precisely the views which we do. The mind of the Society seemed clear as to the necessity for a general adoption of a three years' course of study, and the establishment of State Examining Boards. An effort was made by one member of the Society to prevent endorsement of a resolution urging State legislation of this sort in Pennsylvania, on the ground that it involved a breach of the Code of Ethics. The Society, however, showed plainly that it had no such idea itself, and went straight at the important subject, without stopping long over this antiquated and wearisome objection.

So much is a proper cause of congratulation to the profession. Another matter for congratulation just now is the fact that the Jefferson Medical College has just announced that it stands with those schools which exact a three years' course; and that, after the beginning of the Winter Session for 1890, which is the earliest moment practicable, in view of implied contracts with students already entered, it will exact three years of study from those who wish to have its diploma. This action is the result of a movement from the Faculty of the college, and recognizes the fact that no student can learn, in a two years' course, the things now necessary for a fit practice of medicine.

In connection with this announcement we note the assertion that Harvard and the University of Pennsylvania are the only medical schools in the East which have heretofore required three years of study from their students. This statement overlooks the Woman's College in Philadelphia, which is a three-year college; and it is in diametric opposition to the claims of another institution

in Philadelphia, which states in its catalogue that its term is three years. We have before this heard it said that this claim is not true, and that there are ways in which men who have not been studying three years in any medical school can get a degree from it. We trust there is a mistake about this, and that all the regular medical schools in this city can be counted on as conscientiously devoted to the principle of three years of study. They are all openly committed to the principle, and openly advocate State examinations to decide the question of fitness for a license to practice. This, as we have said before, is an end for which all who desire the advancement of medical education in this country should strive, and it is a state of affairs which no really good medical school should fear.

PUBLIC DISINFECTION.

We learn from the *Bulletin Médical*, May 30, 1888, that the General Council of the Seine has decided to procure light movable ovens, intended for the disinfection of linen, clothing and hangings which have been used on or about persons affected with contagious diseases. The Prefect of Police has also sent out a circular to various officers of the city, notifying them that each canton of the Department of the Seine is provided with one of these apparatuses, and where it is to be found. One of these heating appliances is to be sent free of charge to any place named by a physician, to be used for disinfecting linen, mattresses, covers, curtains, carpets, and such things; and the public officers are instructed to inform the people of their neighborhood that the means of disinfection thus supplied—steam under pressure—is efficient and will not injure the fabrics subjected to it.

This excellent plan might well be adopted in other cities than Paris. In our own country, it would be a wise thing to provide similar means of disinfection, which could be taken to different houses when infectious diseases have occurred, and used without charge by those who need them. Nothing is more difficult sometimes than to carry out a thorough disinfection of the premises in which a conta-

gious disease has run its course. For the poor, the expense is often a serious obstacle; and for the rich the means of disinfection are often almost impossible of attainment. There are very few cities—perhaps there are none—to which such a provision as has been made in Paris would not be a great boom; while, if it were the means of limiting the spread of contagious diseases, its value to the community would be inestimable.

We commend the example of Paris, in this respect, to the notice of our readers, and to our countrymen in general, adding the suggestion that such a service of portable disinfecting machines be joined to a well-ordered system of disinfecting houses. The two belong naturally together, and deserve to be put in practice in this country.

SUPRAPUBIC LITHOTOMY.

At the last Congress of the German Surgical Society, Dr. Neuber, of Kiel, proposed a method of performing suprapubic lithotomy, or cystotomy, in "two times," which he thinks will obviate the risks of peritonitis and phlegmonous infiltration of urine. His method consists in cutting down to the bladder, and attaching it by a few sutures to the edges of the abdominal incision. The wound is then tamponned, and kept open for five or six days. At the end of this time the bladder is cut into, and the purpose of the cystotomy is carried to completion. An attempt is now made to secure union of the wound by first intention, and, if this is not successful, it is treated by drainage and continuous baths.

This method is only a modification of one which is by no means recent; for it is said to have been put in practice at least once in 1773, by Le Blanc, and to have been proposed for regular employment in 1832, by Vidal de Cassis. After a few trials, however, it was entirely abandoned. It might be tried by any one who is too timid to perform suprapubic cystotomy in the usual way; but we agree with Von Bergmann and Trendelenburg, who think that the latter is generally as safe as that which Neuber proposes. The fact is that supra-

pubic cystotomy is not an operation essentially dangerous, and its chances are not materially improved by any attempt to secure union of the surrounding tissues before the bladder is opened.

NOT LIFE, BUT DEATH.

A number of the daily papers of this country have recently cited the following interesting story, taken from the *Aroostock Pioneer*, as furnishing an instance of the power of the mind in prolonging life: A young married man, who was married last fall, had pneumonia. His wife was in Minnesota, where he had intended to join her soon. A telegram was sent to her and she arrived in season only to see her husband alive. He seemingly fought against death to see her once more. As she entered the room he rose in bed and remarked, "I wanted to see you and am now willing to go." After these words were spoken he fell back upon the pillow, turned upon his side and expired.

It seems a pity to spoil such an interesting and romantic story; but the fact is that it illustrates, not the power of mind in prolonging life, but the peril of physical exertion when life is trembling in the balance. The poor fellow no doubt precipitated his death by rising in bed; and he might perhaps be living to-day, and have missed newspaper fame altogether, if he had kept on his back.

BOOK REVIEWS.

[Any book reviewed in these columns may be obtained upon receipt of price, from the office of the *REPORTER*.]

A MANUAL OF THE OPERATIONS OF SURGERY, FOR THE USE OF SENIOR STUDENTS, HOUSE SURGEONS AND JUNIOR PRACTITIONERS. By JOSEPH BELL, M. D., F. R. C. S., Edin., Consulting Surgeon to the Royal Infirmary, etc. Sixth Edition, revised and enlarged. Small 8vo, pp. xvi, 336, with 4 plates. Edinburgh: Oliver & Boyd, 1888. Price, 6 shillings.

This is a handy volume which has met with much success in Scotland, and seems to deserve it. It is a very readable presentation of the operations taught at Edinburgh. It does not show much familiarity with the surgical work outside of Great Britain, and it may not be unfair to judge its general relation to it by the fact that it says "Dr. Bigelow, of Boston, has lately been highly commending a method which he has called litholapaxy"—which refers to an oc-

currence nine years ago, and by no means indicates the position of Prof. Bigelow or of his operation at the present day.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. EDITED BY CHARLES E. SAJOUS, M. D., etc., and seventy associate editors, etc. 5 volumes, 8vo. Philadelphia and London: F. A. Davis, 1888.

These five handsome volumes are the results of a labor which cannot be appreciated by those who have not shared in it, and of a degree of enterprise on the part of the editor-in-chief and the publisher which is in the highest sense creditable to both. There is no work to compare with it in the English language, and only one or two in the world. It contains a selection of the points worth noting in the articles of value on medical subjects published during the year 1887, arranged and classified and subdivided, when the amount of matter permitted of it, into the subsections of a disease—etiology, pathology, treatment, etc. The associate editors have in most cases introduced their own views, and so the work is in reality more than a mere reference book, and compares very favorably with such publications as Schmidt's *Jahrbücher*, *La Revue des Sciences Médicales*.

This being the first year of issue, it is not remarkable to find a certain unevenness in the articles. Some of the editors have introduced too much of their own opinions, and some too little. Another defect, which we think of some consequence, is the brevity of the references, merely the name of the publication referred to being given, and no information as to date, volume, number or page. In this matter we think Virchow and Hirsch's *Jahresbericht* would furnish a suggestion for improvement.

As a whole, the work deserves much praise, and we can heartily commend it to the attention and patronage of our readers. It furnishes an excellent epitome of medical science for the year 1887 at a very reasonable price. We hope the work may continue and prosper!

PAMPHLET NOTICES.

[Any Reader of the *REPORTER* who desires a copy of a pamphlet noticed in these columns will doubtless secure it by addressing the author with a request stating where the notice was seen and enclosing a postage stamp.]

THE PULLEY METHOD OF ADVANCING THE RECTUS, WITH INDICATIONS FOR ITS EMPLOYMENT. By A. E. PRINCE, Jacksonville, Ill. From the *Ophthalmic Review*, September, 1887, and the *St. Louis Med. and Surg. Journal*, March, 1888. 8pp.

AN ASEPTIC ATMOSPHERE. CLUB-FOOT. A RECTAL OBTRATOR. PALATOPLASTY. By DAVID PRINCE, M. D., Jacksonville, Ill. *Journal Press*, 1888. 30 pp.

—Dr. A. E. Prince's pamphlet contains an interesting and clear description of the method which he employs in the operation known as advancing the rectus. This consists essentially in placing a "pulley-suture" in the sclera, near the cornea, and looping through it another suture, which includes the capsule, muscle and conjunctiva. This method has given him excellent results, and he commends it to the notice of other operators. His pamphlet is illus-

trated with excellent wood-cuts, which add much to the value of the description of his method.

—This collection of reprints by Dr. David Prince is a little too comprehensive to permit of justice being done to it in the space at our disposal. The paper on an aseptic atmosphere has been noticed before; that on club-foot describes a method of operating and a shoe which shows great ingenuity. The rectal obturator described and figured does not seem to have been put to the test yet, and it is impossible to express any opinion as to its merits. The paper on palatoplasty describes a form of bead-suture and may be commended to the attention of those who operate for deformities of the soft palate.

CORRESPONDENCE.

A Hydrophobia Question.

EDITOR MEDICAL AND SURG. REPORTER:

Sir:—The following occurrence took place in this vicinity about fifteen years ago: Two young men, farmers' sons, belonging to two well-known families, both of whom were robust, healthy, and keen sportsmen, were upon the same day, at different hours, passing along the Ellisburg road, half a mile from this town, when they espied a dog lying along the fence—a dog strange to them, who were familiar with all the dogs in the neighborhood. With the instincts of sportsmen, each, unknown to the other, stopped, and stooped down to see what was the matter with it. Both were snapped at and bitten, the one on the finger; the other on the face. The wounds were so slight to these stout men that they paid no attention to the injury, and forgot it. In a few weeks (I made no memorandum at the time) they were taken sick within a few days of each other. They lived a mile apart. One was attended by the late Dr. Jennings, of this place, an old and experienced physician; the other by a homœopath. Dr. Jennings, who was familiar with tetanus, told me he had never seen a case of hydrophobia. When he paid his first visit he recognized a strange, and, to him, an unknown disease. On the next day the symptoms resembled what he had read of hydrophobia, and he asked his patient if he had been bitten by a dog. He said no, and it was only after much questioning that his patient could recall the above circumstance. In a few days the man died in great agony. The other man, attended by the homœopath, exhibited the same symptoms, told the same story, and promptly died. Neither ever knew that the other was sick. If the disease that attacked these two men was not hydrophobia, what was it? The

dog disappeared without any other proof of its having rabies.

Yours truly,
JOHN R. STEVENSON.

Haddonfield, N. J., June 8, 1888.

[Our correspondent asks a hard question, and we do not expect to be accused of timidity if we decline, at this distance, and after a lapse of fifteen years, to make a diagnosis in regard to cases of which we have so brief and incomplete an account. Considerable experience in meeting queries like this has demonstrated the fact that it is not wise to turn aside from a systematic study of any disorder to answer individual objections founded upon isolated and more or less imperfect observations. We can assure our correspondent that stories far more credible on their face than the one he gives, have been found to be wholly incorrect. His may also be incorrect in some important detail; and it can no more settle the specific nature of so-called hydrophobia than any other of many which are hard to explain.

We publish his account of these cases, so that others may hear of them and give them what weight they deserve. But we have no idea that they are conclusive of anything, except the faith of the doctors and patients in hydrophobia.—Editor REPORTER.]

Spermatorrhœa and Pulvermacher's Belts.

EDITOR MED. AND SURG. REPORTER:

Sir:—I would like to know what your opinion is of Pulvermacher's belts for the cure of spermatorrhœa; and would you recommend it for this disease? Please answer through your journal, of which I am a reader, and oblige,

Yours truly,
Philadelphia, MEDICAL STUDENT.

June 13, 1888.

[The only sensible course to pursue in spermatorrhœa is to consult a medical man in whom one has confidence, and to run no risks from any "quack" method of treatment.—ED. REPORTER.]

Quadruple Amputation; Correction.

EDITOR MED. AND SURG. REPORTER:

Sir:—I see a mistake has been made in the strength of the dressing solution in the report of quadruple amputation by me in the MEDICAL AND SURGICAL REPORTER, May 26, 1888. It should read: "After operating I used hydr. chl. cor. 3*iv*, sp. vini rect. $\frac{3}{4}$ *iv*; one teaspoonful of the mixture to one pint of tepid water. It now reads, hyd. chl. cor. 3*iv*, sp. vini rect. 3*iv*. This is entirely too strong. Please correct.

Yours truly, G. C. WALLACE, M.D.
Rock Rapids, Iowa,
June 11, 1888.

NOTES AND COMMENTS.

A Madstone in Chicago.

The New York *World*, of June 10, says that a State Street bookseller has a madstone which is reported to have made some marvelous cures of threatened hydrophobia lately. The fifth case within thirty days was a little boy who was bitten by a pug dog a few days before. The stone was applied two days later, and adhered until the next morning. The worst case of the five was that of a little girl, who was bitten by a dog five days before the stone was applied. The attending physician said erysipelas had set in; the hand had turned black and was swollen out of shape; she was very feverish and had become sick. The stone adhered four days, when the patient was apparently perfectly well. In every case, it is alleged, a perfect cure has followed the use of the stone.

This is what they tell about Chicago.

Sam Jones on "Faith Cure" and "Christian Science."

"I'll tell you where this faith cure comes in. There's an old brother and a sister who have been taking all the nasty, quack patent medicines on the market for the last ten years. Somebody comes along and prays over 'em, and they quit using the patent medicines, and they are well again. They say it was faith that cured. It was faith. It was faith which caused them to quit taking old patent nostrums, which cured them."

"I don't say I belong to the Christian Science crowd, or anything of that sort; but I thank God, that by the side of my sick wife I may kneel down and pray that the remedies given by the physician may prove effective. I don't pray over the supernatural. I pray over the pill."

A "Christian Scientist" Gets Off.

The Grand Jury for Middlesex County, Mass., in its report June 10, found no bill against Mrs. Abbie H. Corner, the Christian Scientist of West Medford, charged with manslaughter in causing the death of her daughter, Mrs. Lottie A. James, by neglecting to provide proper medical assistance at the time of her confinement on March 18.

Authority of Boards of Health.

At the meeting of the Board of Health of Philadelphia, June 13, an opinion of the Attorney General was read, which states that acts of Assembly which he quotes "clearly

embrace and imply the power in the Board of Health of a city of the first class, and the proper health officer under their direction, to remove a person infected with small-pox to the hospital without his consent, or, if a minor, the consent of his parents and guardians." He further states: "If vaccination is a precaution reasonably necessary to limit the spread of contagion in the public schools, and the presence of an unvaccinated pupil endangers the general safety, or is a condition likely to directly result in the propagation and spread of disease among pupils generally, then it would be proper, by regulation, during the time of the prevalence of such disease, or in view of its threatened approach, to exclude such pupil from contact with the other attendants upon the school." There is a very big "if" in this opinion!

Remedy for Catarrhal Affections of the Respiratory Tract.

The *International Medical and Surgical Synopsis*, May, 1888, says: Through our friend, Dr. Phillip Scholz, we learned of a combination of remedies used some years ago by an old French physician of this city, in all catarrhal affections of the respiratory tract. We have had occasion to use it in the large clinic attached to the college, in the cases named, and for the mitigation of the cough of phthisis. The mixture is as follows:

B. Terebene	13viiss
Coniine.....	5ss
M. S.—Four drops to be administered to an adult	

every four hours.

The same compound is to be used by inhalation, twenty to thirty drops being mixed with a cupful of hot water, and the vapor inhaled through a funnel, two or three times a day.

In a number of cases of phthisis pulmonalis, in which all the known remedies to allay cough were tried to no avail, the combination acted admirably.

Hydrofluoric Acid in Digestion.

Most of the authors who have employed hydrofluoric acid in the treatment of phthisis have been struck with the fact that the patients who use it show decided increase of appetite. Lépine suggests that this action is the result of a direct influence of the acid upon the mucous membrane of the stomach. In order to test this he gave the drug to chlorotic patients and found that it answered as well as hydrochloric acid.—*Bulletin Medical*, April 15, 1888.

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Dose.—One or two fluid drachms (more or less, as indicated) three times a day, before meals.

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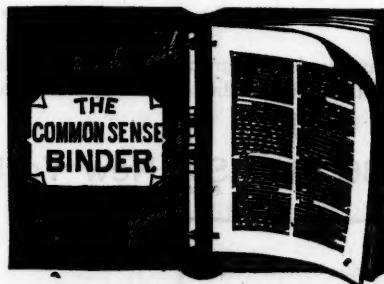
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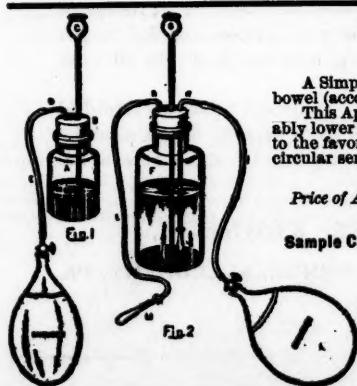
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